Monarch
Marking Systems

Monarch 9400™ Series Thermal Printer

User's Manual

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CAUTION

This equipment can interfere with radio communication. The equipment complies with limits for a Class A computing device pursuant to FCC Rules, Subpart J, Part 15, which provide reasonable protection against such interference when operated in a commercial environment. Operation in a residential area can cause interference which the user must correct at his own expense.

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Preface

When you first receive the 9400™ series printer, there are no formats in memory. Therefore, you must enter formats before printing tags or labels. This manual contains the information you'll need to design and enter your own customized formats. It also provides general information about system administration and configuring the printer.

Getting Started	Provides an overview of the features, operation modes, defaults set, and initial startup information.
Designing a Format	Contains information for designing tags and labels.
Entering a Format	Discusses how Format Entry works; how to copy, modify and delete fields or formats. It also gives tutorials for entering each field type available.
Using the Printer Online	Tells you how to use your computer with the printer to print batches.
Configuring the Printer	Describes password protected features for check digits, time and date, and online printing.
Prompts Reference	Contains a list of prompts and descriptions for Format Entry mode.

Other manuals you might need are:

Equipment Manual	Contains set-up and maintenance procedures. How to load supplies and ribbons is also included.
Operator's Handbook	Explains data entry and batch control for printing. Also includes options you can set for supply requirements.
Programmer's Manual	Gives communications and message structures for sending formats and batch data online.
Messages	Lists and describes the offline and online messages.
Format Design Tools Manual	Contains the Format Record and Data Entry Guide, along with other information and tools to help you design formats.

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1. Getting Started

The 9400™ Series Thermal Printers let you enter your own format image for printing batches of data. A format is the arrangement of fields on the supply. Each field is a group of data that prints in a specific place on the tag or label. The printer uses both thermal direct or ribbon printing on tags and labels.

The number of formats you store depends on how many fields you design into each format. The number and size of your formats may reduce the number of batches you can enter at one time.

You can operate this printer *offline* (manually) or *online* (with a computer). The Online feature communicates with your computer system for transferring data batches and formats to the printer. For more information about Online see section 4, "Printing Online."

The flexibility of this printer provides:

- Six font styles (three with proportional spacing).
- The ability to print three of the font styles in ten different sizes.
- Nine different bar codes (including expanded UPC and EAN) with variable bar length, and special density option.
- Incrementing or decrementing within a field.
- The ability to create sub-fields from a regular field (print multiple fields from data entered once by the operator).
- A merged field for combining data from up to four other fields.
- Fixed data for saving the operator time at data entry.
- Two print colors; black and reverse printing.

- Graphic lines to underline or box-in a field.
- Graphic images (such as your company logo) downloaded from your host computer.
- The ability to rotate individual fields, or characters within a field.
- A *Test* function that lets you test your format as you design it.

There are three password-protected modes: Format Entry mode, Printer Configuration mode, and Auto-online mode. One person should have access to these functions and should serve as the system administrator. The system administrator can customize the printer to meet specific printing needs. Here are some features to consider setting when you first receive the printer.

- A daily startup routine for the operators. You can select the time and date to appear for each startup.
- Security passwords for Format Entry mode, Printer Configuration mode, and Auto-online mode. You can enter unique passwords for your use.
- A special check digit calculation. You can enter check digit calculations specific to your operation.
- Online usage. You must set the parameters for communication with your host computer before going online.

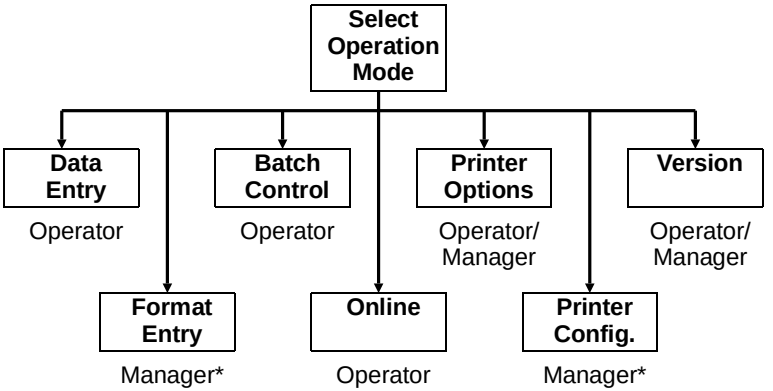
Procedures for these features are in section 5, "Configuring the Printer."

Operating Modes

The printer contains menus to show you the options available. From the Select Operation Mode menu, also called the *main menu*, you can select seven different operation modes.

Data Entry	Lets the operator enter data for a specific format. Refer to the *Operator's Handbook* for data entry instructions.
Format Entry	Lets management add, modify, copy or delete formats. This mode requires a password.
Batch Control	Lets the operator monitor the activity and printing priority of batches in the print queue. The *Operator's Handbook* has information for using this mode.
Online	Supports the transmission of data batches and formats for a host computer to the printer.
Printer Options	Lets you set the printer to meet specific supply requirements. Refer to the *Operator's Handbook* to set these options.
Printer Configuration	Lets management define printer setups for daily operation. This mode requires a password.
Version	Displays the identification number for the printer's software. Give this number to Monarch Service when calling about problems or questions. Refer to the *Messages* manual for more information.

The chart below shows each operation mode, and its intended user.



* Password required for entry

Supply Options

These are the printer options set at the factory:

	Printer Option	Default
1.	Use Batch Separators	No
2.	Adjust Cut Position	Increase at 0
3.	Adjust Print Position	Increase at 0
4.	Define Cost Code	None set
5.	Define Supply Type	Black Mark/Aperture
6.	Define Monetary Symbol	Dollar ($)
7.	Use Cent Sign in Price Fields	No
8.	Define Numbering System	English
9.	Define Print Mode	Continuous
10.	Use Batch Names	No

To change these options, refer to "Setting Printer Options" in the *Operator's Handbook*.

Daily Startup

CAUTION

Turning the printer on and off rapidly can cause it to malfunction. If you have turned the print on (or off), wait 10 seconds before turning it back off (or on).

When you first turn the power on you'll see:

- the copyright message
- the date and time prompts if they are set

Then you'll see

```
Select Supply Type: B
A)lign, B)lack Mark or D)ie Cut
```

- Press ⏎ if you are using black mark or aperture supplies.
- Type **D** and press ⏎ if you are using die cut supplies.
- Type **A** and press ⏎ to calibrate the printer.

Next you'll see the main menu:

```
Select Operating Mode:  ↓
Data Entry              _
```

Press ↓ to display the mode you want, then press ⏎ to select the mode.

If you want to enter a time or a date at daily startup, go to section 5, "Configuring the Printer." You can set the time and date to display each time you turn the power on. The procedure for daily startup is in the *Operator's Handbook*.

Auto-online Mode

If your printer is set for Auto-online mode, daily startup is different. The printer is online as soon as you turn it on. When you turn the printer on, you'll see:

- the copyright message
- the date and time prompts if they are set.

Then you'll see

Online Mode Ready:

For more information about Auto-online mode, see "Printing Online."

2. Designing a Format

Section 2 and 3 contain tutorials for planning and entering a tag or label design (format). This section shows you how to design a format using the four steps below.

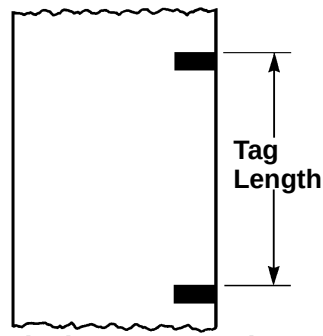
1. Determine the basic elements and the fields for your design.
2. Prepare your supply layout for field locations.
3. Define the secondary elements of your design.
4. Record all design elements for format entry.

Section 3 shows samples of the different fields you can use in a format.

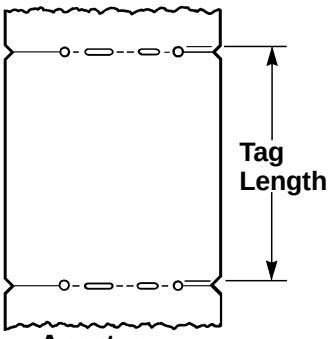
Checking the Supply Size

It is important that you know the exact size of the supply you're using. The sensors in the printer check the supply length as it feeds out of the printer. The size you enter in Format Entry mode tells the printer what size to check for. In Format Entry, the size is also used to determine whether the fields you enter fit the width of the supply.

When measuring aperture supplies and black mark supplies, measure from top to top as shown.



Black Sensor Mark Measurement



Aperture Measurement

Starting Your Format Design

To prepare a layout of your format design, you must define its basic elements. You must decide the:

- Size of the supply.
- Number of fields to be printed on this supply.
- Types of fields that will be printed (bar code, line, graphics or text).
- Location of each field.
- Maximum data length for each field.
- Font style and size for each field.
- Direction each field will be rotated for printing. See "Rotating a Field."

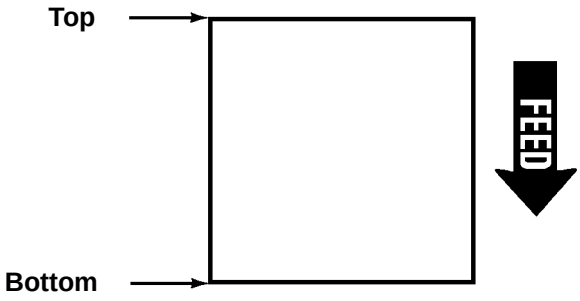
Section 3 contains a tutorial for entering the sample format you are about to design. The design for the sample format has:

- Supply size of 1.20 inches wide by 2.00 inches long.
- Field rotation of **TOP** (the top of each field points toward the top of the supply).
- Five regular fields, a sub-field, a merged field, and a graphic box around the date field.

Here's a print sample of our design:

Identifying the Top of Supply

The *top* of the supply is the cut edge (the side that exits the printer last). The *bottom* of the supply is the leading edge (the side that exits the print first). The figure below shows the top edge and the bottom edge of the supply.



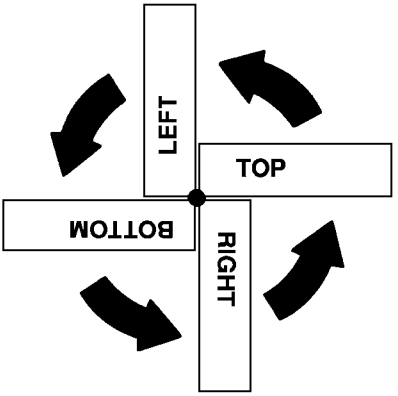
Rotating a Field

There are four directions you can print a field on the supply:

TOP	The top of the field points to the top edge of the supply.
LEFT	The top of the field points to the left edge of the supply.
BOTTOM	The top of the field points to the bottom edge of the supply.
RIGHT	The top of the field points to the right edge of the supply.

The pivot point for the field is the horizontal/vertical location you choose in Format Entry.

It is possible to rotate the field completely or partially off the supply. Make sure you allow for the rotation you select when you choose the field location. The field and character rotation examples later in this section show how a field moves when it is rotated.



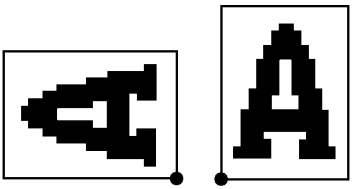
Rotating Characters Within a Field

There are two directions you can print a character within a field:

TOP The top of the character points to the top of the field.

LEFT The top of the character points to the left side of the field.

Notice that the characters shift. The pivot point is shown for each rotation.



Left **Top**

In the examples the field uses TOP rotation as discussed in "Rotating a Field." You specify both field and character rotation in Format Entry mode. The field and character rotation examples later in this section show how a character moves when it is rotated.

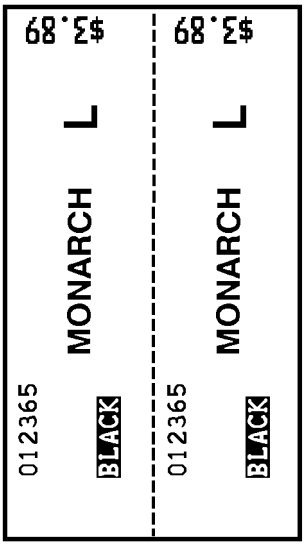
When rotating a field and its characters, make sure the rotations you select are compatible. The horizontal/vertical location you choose in format entry is the pivot point for both the field and the character rotation.

This sample is set up as follows:

Field Rotation: LEFT
(all fields except price)

Character Rotation: TOP

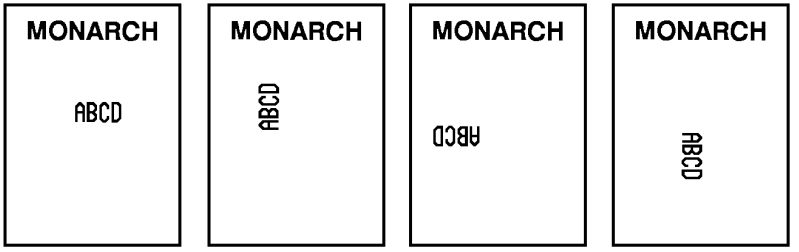
Price (field) Rotation: BOTTOM



Field and Character Rotation Examples

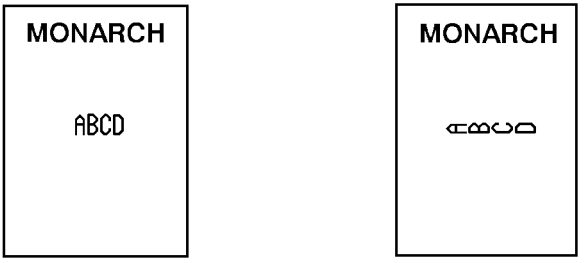
Field Rotations:

In the examples below, the *character* rotation is set at TOP.



Character Rotations:

In the examples below, the *field* rotation is set at TOP.



Top **Left**

Preparing Your Supply Layout

Once you know the basic elements you want for your format, place them on a Supply Layout form. This helps you determine the exact print location of each field. For your convenience, blank Supply Layout forms for English and Metric systems are in Format Design Tools. Information about font sizes and magnification is also in the *Format Design Tools Manual* and Section 6, "Prompts Reference."

1. Mark off the supply size used with this format design on the supply layout form.

2. Pencil in the possible location of each field. As you place the different fields, decide where you want the top of each field and the top of the characters within each field.

3. Sketch in the bar code and the data for each field.

Fonts and Horizontal Field Location

You can choose whether you want to print using:

- 9425/9445/9465 fonts (character sets) and horizontal field locations
- 9420/9440 fonts and horizontal field locations.

The alphabetic characters in the 9425, 9445, and 9465 printer fonts (except OCR) are proportional. This means that each letter uses only as much space as it needs (the letter **I**, for instance, occupies much less space than the letter **M**). All ten numeric characters in each font take up the same amount of space, whether the number is a **1** or, for instance, a **0**. This makes numbers line up correctly when you print them in columns.

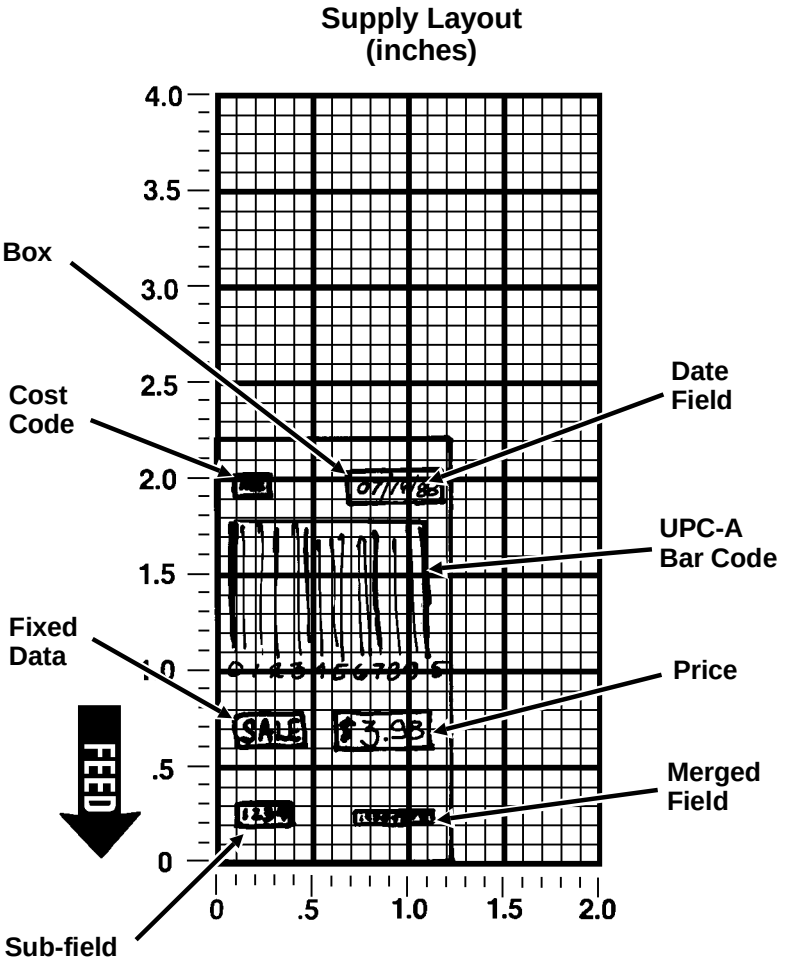
The characters in the 9420 and 9440 printers are monospaced. Every character takes up the same amount of space.

The horizontal field location on the 9425, 9445, and 9465 printers starts at the dot nearest to the location you enter (nearest 0.0052 inch).

On the 9420 and 9440 printers, the horizontal field location starts at the nearest 8th dot (nearest 0.04 inch) to the location you enter.

You'll find more information about proportional and monospaced fonts and horizontal field location in "Prompts Reference" and in the *Format Design Tools* manual.

The Supply Layout below shows our sample format design.



Planning the Field Contents

Now you are ready to decide on the contents of your fields. For text fields such as: date, time, price, or cost code you must decide:

- Which fields are regular fields and which are sub-fields? (Sub-fields are created from regular field data.)
- What prompt should the operator see at data entry?
- Is the field length fixed or variable?
- Is the print color black or white (reversed)?
- Should certain field positions increment or decrement?
- Is there a check digit? If so, which calculation scheme is used? How is the check digit generated (operator entry or automatic)?

NOTE: If you want to use a check digit, you'll need to define the calculation scheme in Printer Configuration mode *before* format entry. See "Defining a Check Digit" in section 5.

- Is this a verify field?
- Is the data at data entry to be numbers, letters, or either?
- Which direction should the characters print within the field?
- Are there any fixed characters (characters that are always the same) in the format?

Section 6, "Prompts Reference" contains all the prompts for Format Entry mode, and the permitted values.

When you enter a bar code field you must decide on some values. Others are pre-set. The UPC-A, UPC-E, EAN-8, and EAN-13 bar codes have some values that are pre-set and can't be changed. You don't see prompts for them when you define UPC or EAN bar code fields. These values are:

- Data Type (numeric)
- Field length (fixed)
- Number of characters (depends on bar code type)
- Density (standard)

The following table shows the options for each bar code type.

Prompt	UPCA/ UPCE	EAN8/ EAN13	Code 39	I 2 of 5	NW7	Code 128	MSI
Barcode height	✔	✔	✔	✔	✔	✔	✔
Barcode density			✔	✔		✔	✔
Human Readable Characters	✔	✔					
Include extended characters	✔	✔					
Cost code field	✔	✔	✔	✔	✔	✔	✔
Length of UPC barcode	✔	✔					
Field Length			✔	✔	✔	✔	✔
Number of characters			✔	✔*	✔	✔	✔
Auto inc/dec field			✔	✔	✔	✔	✔
Check digit	✔	✔	✔	✔	✔	✔	✔
CD scheme number			✔	✔	✔		
Mark positions			✔	✔	✔		
Include Mod 43 CD			✔				
Verify field	✔	✔	✔	✔	✔	✔	✔
Select type of data			✔	✔	✔	✔	
Enter fixed characters	✔	✔	✔	✔	✔	✔	✔

* I 2 of 5 must have an *even* number of data digits.

For more information about these options, see section 6, "Prompts Reference."

Recording the Field Contents

Using your format design, record the values you'll be using to enter the format. The following pages list the values used for our sample design fields. Section 3 contains tutorials for entering each field in Format Entry mode.

The options and values below are for fields 1 (bar code) and 2 (sub-field).

Option	Field 1
Field 01	P
Data entry prompt	UPCA
Enter location	0.1/1.0
Top of field	T
Enter type of field	B
Select barcode	UPCA
Barcode height	0.75
Human readable	B
Include extended char	Y
Bar code density	1
Cost code	N
Length of UPC barcode	S
Check digit	G
Price check digit	N
Verify field	N
Enter fixed characters	**ENTER**

Option	Field 2
Field 02	S
Enter field number to use	1
Enter location	0.1/0.2
Top of field	T
Enter type of field	T
Select field font	S
Font magnification	1
Top of characters	T
Enter the print color	B
Formatting	B
Mark characters to use	space, 4 X's

ENTER = Press to skip this option.

The options and values below are for field 3 (cost code), field 4 (date), field 5 (fixed data), and field 6 (price).

Option	Field 3	Field 4	Field 5	Field 6
Field nn	P	P	F	P
Data entry prompt	COST CODE	DATE	-	PRICE
Enter location	0.1/1.89	0.75/1.89	0.1/0.6	0.6/0.6
Top of field	T	T	T	T
Enter type of field	T	T	T	T
Select field font	S	R	S	R
Font magnification	1	1	1	2
Top of characters	T	T	T	T
Enter the print color	B	B	B	B
Cost code	Y	N	N	N
Price field	N	N	-	Y
Time or date field	N	D	N	-
Field length	V	-	-	-
Number of characters	3	-	4	6*
Auto inc/dec field	-	-	N	-
Check digit	N	-	N	-
Verify field	N	-	-	N
Select type of data	N	-	-	-
Enter fixed characters	ENTER	-	SALE	-

* Length includes the monetary symbols for price fields.
\- Option is not available for this field type.
ENTER = Press ⏎ to skip this option.

The options and values below are for fields 7, 8, 9, and 10, which make up the line box.

Option	Field 7	Field 8	Field 9	Field 10
Field nn	L	L	L	L
Enter location	0.64/1.85	0.64/1.85	0.64/2.01	1.14/1.85
Line Horiz/Vert	V	H	H	V
Stop location	2.01	1.15	1.15	2.03
Width of line	4	4	4	4

The values below are for field 11 (merged field).

Option	Field 11
Field 11	M
Enter location	0.7/0.2
Top of field	T
Enter type of field	T
Select field font	R
Font magnification	1
Top of characters	T
Enter the print color	B
Field length	V
Number of characters	9
Check digit	N
Enter fixed characters	**ENTER**
Enter field number to use	1
Formatting	B
DST:	GHIJK
Padding	L
Pad char	0
Merge another?	Y
Field to use	6
Formatting	B
DST:	ABCD
Padding	L
Enter pad character	0
Merge another field	N

ENTER = Press to skip this option.

Defining the Supply for a Format

You'll also need to decide the following items.

Number of parts The number of times the data prints across the tag width. The supply may or may not be perforated. For example, if you want the data to print only once on the tag, then enter 1 for *one part* supply. The section "Creating a Multiple Part Tag" tells you how to create multiple part tags.
Values: 1-5

Cutting Whether you want cuts between each tag or set of tags. You can answer "yes" to this prompt only if your printer has a knife. A "no" answer prints all the tags in one strip.
Values: Y (yes) or N (no)

Cut last ticket Do you want to cut the last tag or label in a batch as soon as you print it? (Normally, the last tag of label remains in the printer until the next batch begins to print). You only see this prompt if you answer "yes" to the *Cutting* prompt.

NOTE: If you choose, **Y** the printing shifts 0.78 inch toward the top of the supply (the edge of the supply that exits the printer last). Choose **N** if your format has fields on the first 0.78 inch.
Values: 1-9999

Cut multiple The number of tags or labels printed between cuts as a set. For example, if you want two copies of each tag, choose a cut multiple of **2**. This prompt only appears if you answered "yes" to the *Cutting* prompt.
Values: 1-9999

Cut between batches — You'll only see this prompt if you answer "no" to cutting (between tags). Answer "yes" to this prompt if you want the printer to cut between batches.
Values: Y (yes) or N (no)

Print multiple — The number of copies to print of each tag as a *set* within a batch. For example, if you want three copies of each tag, choose a print multiple of **3**. That is, there are three tags per set. This prompt appears only if you answered "no" to the *Cutting* prompt.
Values: 1-9999

Print quantity — The number of tags, or sets of tags printed in a batch. For example, if you specify a cut or print multiple of 1 with a batch quantity of 30, you'll get 30 tags. If you specify a cut or print multiple of 2 with a batch quantity of 30, you'll print 60 tags (30 *sets* of tags with 2 tags per set).
Values: 1-9999

For all supply definitions, you can:

1. Fix (lock in) a value for any of these prompts when you enter the format.
2. Press ⓒ, then ⏎, to let the operator enter a value in Data Entry mode.

   NOTE: To let the operator enter a value for the Print Quantity supply definition, just press ⏎ at the prompt. You don't need to press ⓒ first.

These are the values we used for our sample design (in section 3).

Option	Values
Supply size	1.20" width, 2.20" length
Number of parts	1
Cutting	Y
Cut last ticket	1
Cut multiple	1
Print quality	Leave blank (Press ⏎)

Recording Stored Formats

If you plan to use more than one format, you should provide a list for the operator. The list lets the operator know which format to use for an item, and the supply size needed. For example:

Store Formats

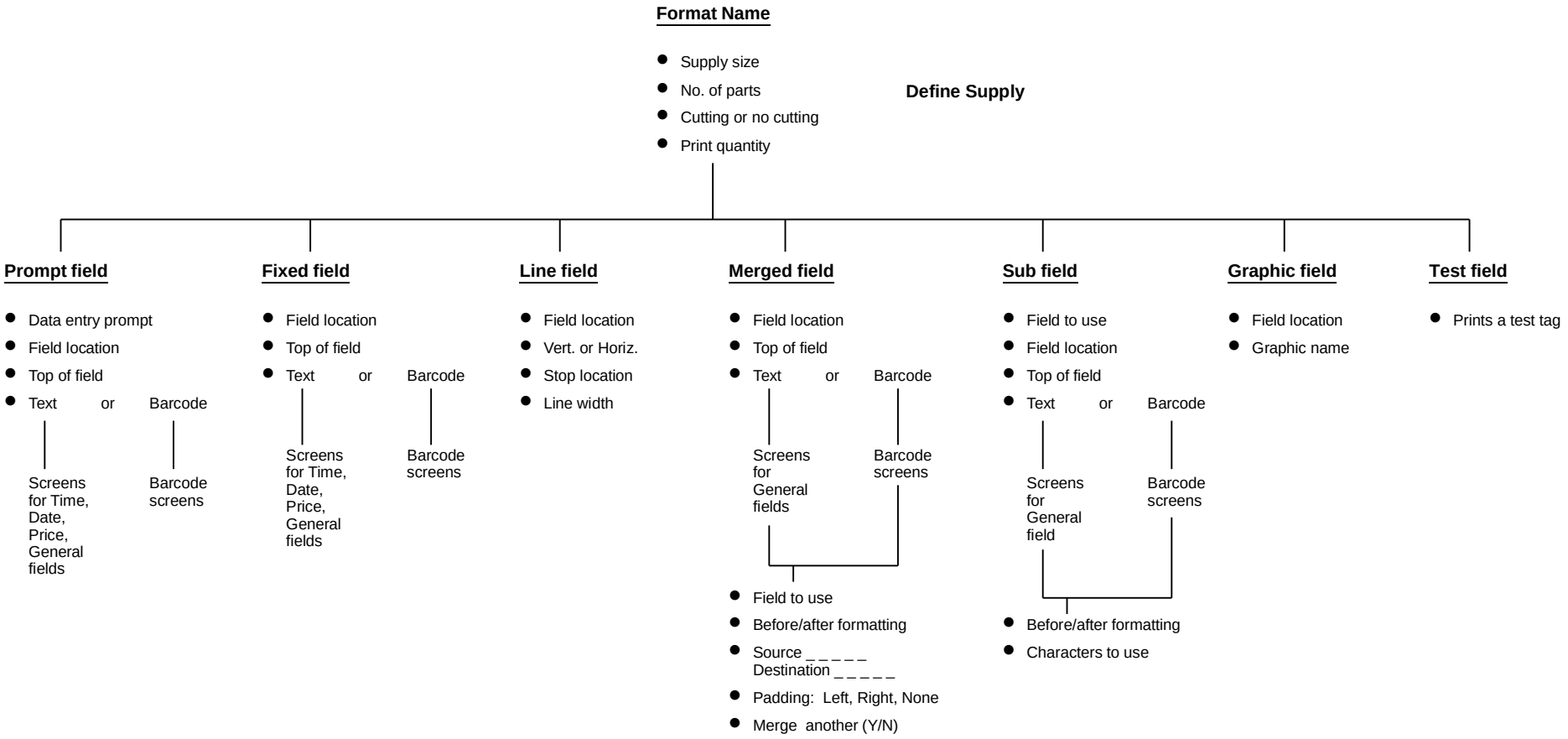
Printer # _____		Date ___/ ___/ ___
Format Name	**Used For**	**Supply**
Sample	1 pc garment	1.20 x 2.20
Jewelry1	rings	1.20 x 1.22
Jewelry2	watches	1.20 x 1.57

For each format, make a copy of the Operator Data Entry Guide provided in the *Format Design Tools Manual*. List each prompt in the format and the data that the operator should enter at the prompt. Attach a printed sample and give the completed form to the operator to refer to during data entry.

The next section shows you how to enter a format.

3. Entering a Format

Format Entry is the function you use to enter your new tag or label design (format). You can also modify and delete existing designs. The chart below shows an overview of the Format Entry process.



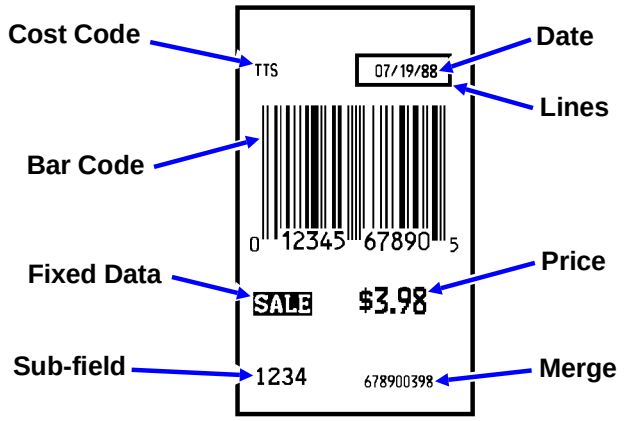
This section also contains a tutorial with sample data, to show you how to enter different field types. Section 6, "Prompts Reference" contains detailed information about prompts.

Kinds of Fields

A *field* is a group of data you define to print at a specific location on the tag or label. Some examples of fields are: bar code field, price field, and date field.

Below is a print sample which contains all the kinds of fields available, except a graphic field. (The sample may look slightly different from the tags printed on your printer.) The instructions for entering all the available fields are under "Defining the Fields," in the "Starting Format Entry" section (you'll also find a sample graphic field in the same section).

English measurements (inches) are used for the sample tags.



Bar Code	There are nine bar codes available: UPC-A, UPC-E, EAN-8, EAN-13, NW7, Code 39, Interleaved 2 of 5, Code 128, and MSI. The printer also prints expanded UPC and EAN bar codes (+2 and +5). See "Entering a Bar Code Field."
Cost Code	Translates your actual cost data to a special code for printing. See "Entering a Cost Code Field."
Date/Time	Prints the month, day and year. See "Entering a Date Field." You can also select the date style for printing the date in Printer Configuration mode. Refer to section 5 "Configuring the Printer" to set the date style. The time field prints the hours and minutes. Refer to "Date and Time Fields" for more information about these fields.
Fixed Data	Prints constant data. The operator is not prompted to enter data for this field. The data you enter at Format Entry automatically prints on every batch of supplies using that format. See "Entering a Fixed Data Field."
Lines	Lets you draw a box around a field, underline a field, or strike through a field. See "Entering a Line Box."
Graphics	Lets you print a graphics file downloaded from a host computer.
Merged	Lets you combine up to nine regular fields to print as a single field. See "Merging Fields."
Price	Automatically generates the monetary symbols for printing. For example: the dollar sign and decimal. See "Entering a Price."

Sub-field Lets you copy a group of data from a regular field, and print it in a new location. As with the regular field you specify the location of the sub-field. See "Entering a Sub-field."

Starting Format Entry

Here are a few tips to help you enter your formats easily.

- Type responses for all prompt screens and press ⏎ , unless otherwise stated.
- The first five prompts in format entry identify the format and define the supply to be printed. The remaining prompts define the fields.
- Field definition begins with the Field Definition screen:

```
Field 01 p)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est____
```

  When you finish defining a field, the screen returns to the Field Definition screen and the field number (**Field #**:) increases by one.

- You can test your format design any time during format entry (if you have defined at least one field). To test your design, select **Test** from the Field Definition screen. The format you are working on will print with test data in the fields you defined.
- If you press F1 before you have completely defined your first field, your entries for the new format are *not* saved.
- If you press F1 after you have defined at least one field, only the new field (the one you were working on) won't be saved.
- If you press F1 while you are modifying an existing field, the field you are modifying won't be changed.

Entering Supply Information

You can enter supply values when you define the format. Or you can press ⓒ, then ⏎, to let the operator enter a value in Data Entry. (To let the operator enter a value for Print Quality, just press ⏎ at the prompt without pressing ⓒ first).

The first steps in Format Entry include naming a format and entering information about the supply you're using.

1. Begin Format Entry from the main menus. Press ↑ or ↓ to display **Format Entry** and press ⏎. You'll see

```
Enter password:_____
```

2. Enter your 1-8 character security password and press ⏎. See "Changing Passwords" if you need to reset the password.

For example, type **M9400** and press ⏎. You'll see

```
Format Entry Mode
Enter format name
```

3. Type a 1-8 character format name and press ⏎. You'll see the message **New Format (NAME)**

For example, type **SAMPLE** and press ⏎. You'll see

```
Stock dimensions (inches)
Width = 0.00  Length = 0.00
```

4. Enter up to 3 digits for inches (4 digits for millimeters or dots) for the supply width and press ⏎ . Do not enter a decimal point. Then enter up to 3 digits for the supply length and press ⏎ . Don't enter zeros for whole numbers.

NOTE: You can set the printer to accept English, metric, or dot units. See section 5, "Configuring the Printer." You must enter all dimensions using the units you specified.

To print the sample tag shown on the following pages, you must have supply loaded that is at least 1.20 inches wide and 2.20 inches long. If our supply size is different, enter the length and width.

For supply that is 1.20 inches wide and 2.20 inches long: type **120** and press ⏎ , then type **220** and press ⏎ .

5. Enter the number of parts for the supply.

```
Number of parts [1-5]: 1
CLEAR to define at Data Entry
```

Type **1** and press ⏎ .

6. Specify cutting or no cutting of the supply during printing.

```
Cutting [Y/N]:  N
CLEAR to define at Data Entry
```

- If you want to cut between batches, type **Y** and press ⏎ .
- If you do not want to cut between batches, press ⏎ . Go to step 9.

7. Choose whether to cut the last tag in each batch.

```
Cut last ticket [Y/N]:  N
CLEAR to enter at Data Entry
```

- To cut the last tag in the batch, type **Y** and press ⏎ .
- If you don't want to cut the last tag in the batch, press ⏎ .

NOTE: If you choose **Y**, the printing shifts 0.78 inch toward the top of the tag (the edge of the tag that exits the printer last). You cannot print on the first 0.78 inch of the tag. Choose **N** if your format has fields on the first 0.78 inch of the tag.

8. Enter the number of tags to print between cuts.

```
Cut multiple [1-9999]:  1
CLEAR to enter Data Entry
```

Press ⏎ to print one tag between cuts.

9. Specify cutting or no cutting between batches.

```
Cut between batches [Y/N]:  N
CLEAR to define at Data Entry
```

- If you want to cut between batches, type **Y** and press ⏎ .
- If you do not want to cut between batches, press ⏎ .

10. Enter the number of duplicates to print as a set, before printing the next set.

Press ⏎ to print one tag in each set.

```
Print multiple [1-999]:  1____
CLEAR to enter at Data Entry
```

11. Enter the batch quantity for printing.

```
Quantity to print [1-999]:____
ENTER to define at Data Entry
```

- Press ⏎ to enter the batch amount at data entry.
- Type a number for the number of tags you want to print and press ⏎. For example, to print a batch of 30 tags, type **30** and press ⏎.

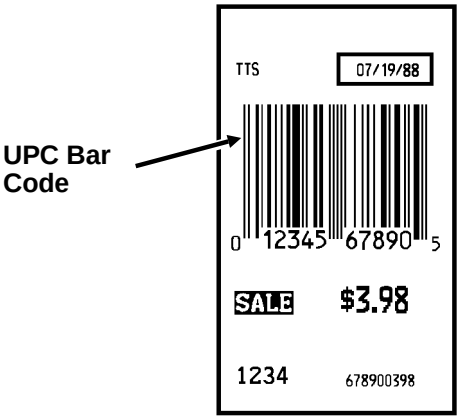
Defining the Fields

Now you can begin to enter the fields for the sample tag format. In Format Entry, fields are grouped into six types:

- Prompt (includes text fields, bar code fields, price fields, etc.)
- Fixed (contains data that remains constant)
- Line (draws lines or boxes)
- Graphic (prints graphics downloaded from a host computer)
- Merge (a single field with data from up to nine regular fields)
- Sub-field (contains data copied from a field in a different location)

Entering a Bar Code Field

To define the bar code field on the sample tag, make the selections below. These selections define a UPC-A bar code. For certain bar codes, there are preset values. Refer to section 6, "Prompts Reference," for a list of preset values and the selections you must make for each bar code.



Format Entry Prompt	What You Do
Field 01: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	Type **P** and press ⏎ .
Data entry prompt:_____ For 'Field 01' press **ENTER**	Type **UPCA** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V = 0.00	Type **01** for 0.10 and press ⏎ ; type **1** for 1.00 and press ⏎ .
Top of field towards: T T)op, L)eft, B)ottom or R)ight	Press ⏎ to select **Top**.

Format Entry Prompt	What You Do
Enter type of field: T T)ext or B)arcode	Type **B** and press ⏎ .
Select barcode: ↓ UPCA	Press ⏎ .
Barcode height: 0.00	Type **075** for 0.75 inches and press ⏎ .
Human Readable Characters: N A)bove, B)elow, or N)one	Type **B** and press ⏎ .
Include extended characters in Human Readable [Y/N]: N	Type **Y** and press ⏎ .
Barcode density [1-2]: 1	Press ⏎ .
Cost code field: N Y)es or N)o	Press ⏎ .
Length of UPC bar code: S S)tandard, 2 UPC+2 or 5)UPC+5	Press ⏎ .
Check digit: N G)enerate, V)erify or N)one	Press ⏎ .

Format Entry Prompt	What You Do
Include price check digit: N Y)es or N)o	Press ⏎ .
Verify field: N Y)es or N)o	Press ⏎ .
Enter any fixed characters: _____	Press ⏎ to skip this prompt.
Field 02: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Now you can: • Type **T** and press ⏎ to test your format. • Press F1 to exit field definition. • Make the following selections for Field 02.

Entering a Sub-field

A *sub-field* contains data which is copied from a portion of a primary field. This sub-field is printed as a separate field on the tag or label. You can specify the print location and the font for printing.

During data entry, the operator enters the data for the primary field only. The data for the sub-field is automatically copied and printed. For more information about sub-fields, see "Sub-Fields" in section 6.

The following prompts show how to extract a 5-digit code from the UPC-A bar code in our format SAMPLE. Therefore, you'll need to enter the bar code field first. The sub-field will print in the lower left corner of the tag as shown.

Format Entry Prompt	What You Do
Field 02: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Type **S** and press ⏎ .
Enter field number to use:_	Type **1** and press ⏎ .

Format Entry Prompt	What You Do
Enter location (inches) for 'Field 02' H = 0.00 V = 0.00	Type **01** for 1.10 and press ⏎ ; type **02** for 0.20 and press ⏎ .
Top of field towards: T T)op, L)eft, B)ottom or R)ight	Press ⏎ .
Enter type of field: T T)ext or B)arcode	Press ⏎ .
Select field font: S S)td, R)educed, B)old or O)CR	Press ⏎ .
Select font magnification [1-10]: 1	Press ⏎ .
Top of characters towards: T T)op or L)eft	Press ⏎ .
Enter the print color: B B)lack or W)hite	Press ⏎ .
Formatting: A B)efore or A)fter	Type **B** and press ⏎ . In this example we use the first 4 digits of the bar code (excluding the number system character).

Format Entry Prompt	What You Do
Mark characters to use _____	Blanks appear for the field length of the primary field. Press △, then type **XXXX** so the screen looks like:
Mark characters to use XXXX_____	This marks the data positions to be copied. Press ⇨.
Field 03: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Now you can: • Type **T** and press ⇨ to test your format. • Press F1 to exit field definition. • Make the following selections for Field 03.

Entering a Cost Code Field

Cost codes let you enter information (such as a price) and print it in a code that only you understand. Before defining a cost code field, you must enter a translation table in Printer Options mode. To enter a translation table, refer to "Defining a Cost Code" in the *Operator's Handbook*.

NOTE: You cannot use a cost in a merged field or in a sub-field.

Format Entry Prompt	What You Do
Field 03: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Type **P** and press ⏎ .
Data entry prompt:_____ For 'Field 03' press ENTER	Type **COST CODE** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V = 0.00	Type **01** for 0.1 and press ⏎ ; type **19** for 1.90 and press ⏎ .
Top of field towards: T T)op, L)eft, B)ottom or R)ight	Press ⏎ .

Format Entry Prompt	What You Do
Enter type of field: T T)ext or B)arcode	Press ↵ .
Select field font: S S)td, R)educed, B)old or O)CR	Type **R** and press ↵ .
Select font magnification [1-10]: 1	Press ↵ .
Top of characters towards: T T)op or L)eft	Press ↵ .
Enter the print color: B B)lack or W)hite	Press ↵ .
Cost code field: N Y)es or N)o	Type **Y** and press ↵ .
Price field: N Y)es or N)o	Press ↵ .
Time or date field: N T)ime, D)ate or N)o	Press ↵ .
Field length: V F)ixed, V)ariable or O)pt fixed	Press ↵ .

Format Entry Prompt	What You Do
Number of characters in the field:__(Max if variable)	Type **3** and press ⏎ .
Check digit: N G)enerate, V)erify or N)one	Press ⏎ .
Verify field: N Y)es or N)o	Press ⏎ .
Select type of data: E A)lpha, N)umeric or E)ither	Type **N** and press ⏎ . (**NOTE:** The data type must be the same as in the translation table. For example, if your translation table has numeric data as the "Entered Data," you must define the cost code field as "numeric" or "either.")
Enter any fixed characters: ____	Press ⏎ .
Field 04: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	Now you can: • Type **T** and press ⏎ to test your format. • Press F1 to exit field definition. • Make the following selections for Field 04.

Entering a Date Field

There are two ways to enter a date field:

- As a prompt field. If you do it this way, the date stored in the printer is displayed at data entry. The operator can accept that date or change it. (The example below uses a prompt field.)
- As a fixed field. If you do it this way, the operator never sees the field at data entry. The date stored in the printer is automatically printed.

You can also select the order of printing the month, day and year. Select the date style in Printer Configuration. For more information, refer to section 5, "Configuring the Printer" later in this manual.

For more information about time and date fields, see section 6, "Prompts Reference."

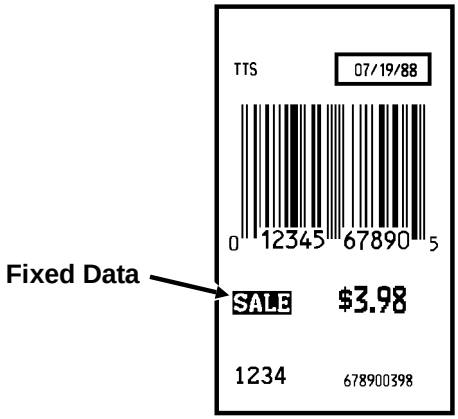
Format Entry Prompt	What You Do
Field 04: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Type **P** and press ⏎ .
Data entry prompt:_____ For 'Field 04' press **ENTER**	Type **DATE** and press ⏎ .
Enter location (inches) for 'Field #' H - 0.00 V = 0.00	Type **075** for 0.75 and press ⏎ ; type **19** for 1.90 and press ⏎ .
Top of field towards: T T)op L)eft,, B)ottom or R)ight	Press ⏎ .
Enter type of field: T T)ext or B)arcode	Press ⏎
Select field font: S S)td, R)educed, B)old or O)CR	Type **R** and press ⏎ .
Select font magnification[1-10]: 1	Press ⏎ .
Top of characters towards: T T)op or L)eft	Press ⏎ .
Enter the print color: B B)lack or W)hite	Press ⏎ .

Format Entry Prompt	What You Do
Cost code field: N Y)es or N)o	Press ⏎ .
Price field: N Y)es or N)o	Press ⏎ .
Time or date field: N T)ime, D)ate or N)o	Type **D** and press ⏎ .
Field 05: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Now you can: • Type **T** and press ⏎ to test your format. • Press F1 to exit field definition. • Make the following selections for Field 05.

Entering a Fixed Data Field

The data you enter for this field is stored in the format and automatically prints whenever the format is used. The operator is not prompted to enter data for this field at Data Entry.

For more information about fixed data, see section 6, "Prompts Reference."



Format Entry Prompt	What You Do
Field 05: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Type **F** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V = 0.00	Type **01** for 0.10 and press ⏎ ; type **06** for 0.60 and press ⏎ .
Top of field towards: T T)op, L)eft, B)ottom or R)ight	Press ⏎ .
Enter type of field: T T)ext or B)arcode	Press ⏎ .

Format Entry Prompt	What You Do
Select field font: S S)td, R)educed, B)old or O)CR	Press ⏎ .
Select font magnification [1-10]: 1	Press ⏎ .
Top of characters towards: T T)op or L)eft	Press ⏎ .
Enter the print color: B B)lack or W)hite	Type **W** and press ⏎ .
Cost code field: N Y)es or N)o	Press ⏎ .
Time or date field: N T)ime, D)ate or N)o	Press ⏎ .
Number of characters in the field:__(Max if variable)	Type **4** and press ⏎ .
Auto inc/dec field: N I)ncrement, D)ecrement or N)o	Press ⏎ .
Check digit: N G)enerate, V)erify or N)one	Press ⏎ .

Format Entry Prompt	What You Do
Enter any fixed characters: ____	Type **SALE** and press ⏎ .
Field 06: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Now you can: • Type **T** and press ⏎ to test your format. • Press F1 to exit field definition. • Make the following selections for Field 06.

Entering a Price Field

The printer automatically generates the monetary symbols for price fields (e.g., dollar sign and decimal) at data entry. However, when you define the field length, you must allow for these symbols.

Format Entry Prompt	What You Do
Field 06; P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est_	Type **P** and press ⏎ .
Data entry prompt:_____ For 'Field 06' press **ENTER**	Type **PRICE** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V = 0.00	Type **06** for .6 and press ⏎ ; type **06** for .6 and press ⏎ .
Top of field towards: T T)op, L)eft, B)ottom or R)ight	Press ⏎ .
Enter type of field: T T)ext or B)arcode	Press ⏎ .

Format Entry Prompt	What You Do
Select field font: S S)td, R)educed, B)old or O)CR	Type **R** and press ⏎ .
Select font magnification [1-10]: 1	Type **2** and press ⏎ .
Top of characters towards: T T)op or L)eft	Press ⏎ .
Enter the print color: B B)lack or W)hite	Press ⏎ .
Cost code field: N Y)es or N)o	Press ⏎ .
Price field: N Y)es or N)o	Type **Y** and press ⏎ .
Number of characters in the field__(Max if variable)	Type **6** and press ⏎ ; 4 digits for price and 2 positions for the symbols ($.).
Verify field: N Y)es or N)o	Press ⏎ .

Format Entry Prompt	What You Do
Field 07: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	Now you can: • Type **T** and press ⏎ to test your format. • Press F1 to exit field definition. • Make the following selections for Field 07.

Entering a Line Field

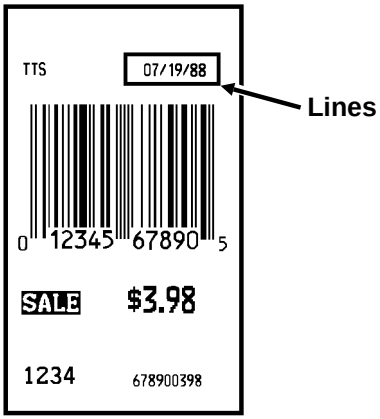
The line drawing feature requires specific measurements. On the sample tag, the line box surrounds the date field. In the sample,

- The date field has 8 characters.
- The font is 1x Reduced.
- The field location is horizontal = 0.75, vertical = 1.90.

The table below shows the start and stop locations for each line of this sample box. The line width is 0.02 inches (selection 4).

	Start Points				
Line #	**Horz.**	**Vert.**	**H or V**	**Stop Point**	**Width**
1	0.65	1.85	V	2.01	4
2	0.65	1.85	H	1.15	4
3	0.65	2.01	H	1.15	4
4	1.15	1.85	V	2.03	4

For more instructions about using the line drawing feature, refer to section 6, "Prompts Reference."



For this lesson, you must enter the sample date field **first**! Refer to the information in "Entering a Date Field."

Format Entry Prompt	What You Do
Field 07: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	Type **L** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V=0.00	Type **065** and press ⏎ ; type **185** and press ⏎ . (For locations 0.65 and 1.85.)
Line: V H)orizontal or V)ertical	Press ⏎ .
Stop location V = 0.00	Type **201** for 2.01 and press ⏎ .

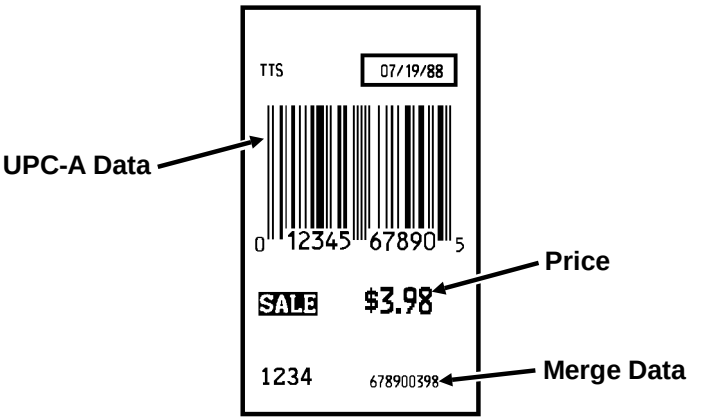
Format Entry Prompt	What You Do
Width of line [1-15]:__	Type **4** and press ⏎ .
Field 08: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	Type **L** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V = 0.00	Type **065** and press ⏎ ; type **185** and press ⏎ . (For locations 0.65 and 1.85.)
Line: V H)orizontal or V)ertical	Type **H** and press ⏎ .
Stop location H = 0.00	Type **115** for 1.15 and press ⏎ .
Width of line [1-15]:__	Type **4** and press ⏎ .
Field 09: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	Type **L** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V=0.00	Type **065** and press ⏎ ; type **201** and press ⏎ . (For locations 0.65 and 2.01.)
Line: V H)orizontal or V)ertical	Type **H** and press ⏎ .

Format Entry Prompt	What You Do
Stop location H = 0.00	Type **115** for 1.15 and press ⏎ .
Width of line [1-15]:__	Type **4** and press ⏎ .
Field 10: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	Type **L** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V = 0.00	Type **115** and press ⏎ ; type **185** and press ⏎ . (For locations 1.15 and 1.85.)
Line: V H)orizontal or V)ertical	Press ⏎ .
Stop location V = 0.00	Type **203** for 2.03 and press ⏎ . (This line an extra 0.02 inch long to compensate for the width of the top horizontal line.)
Width of line [1-15]: 1	Type **4** and press ⏎ .

Format Entry Prompt	What You Do
Field 11: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	Now you can: • Type **T** and press ⏎ to test your format. • Press F1 to exit field definition. • Make the following selections for Field 11.

Merging Fields

You can take data from up to 9 regular fields, then print this data as one field. In the example below, a 5 digit number is extracted from the UPC-A bar code. This number is combined with the 4-digit price data. The data from both fields then prints as one field, as shown.



To use this lesson, you must enter a **bar code** as field 1, and the **price** as field 6. Refer to the previous sections "Entering a Bar Code Field" and "Entering a Price Field."

Format Entry Prompt	What You Do
Field 11: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est	Type **M** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V = 0.00	Type **07** for 0.7 and press ⏎ ; type **02** for 0.2 and press ⏎ .
Top of field towards: T T)op, L)eft, B)ottom or R)ight	Press ⏎ .
Enter type of field: T T)ext or B)arcode	Press ⏎ .
Select field font: S S)td, R)educed, B)old or O)CR	Type **R** and press ⏎ .
Select font magnification [1-10]: 1	Press ⏎ .
Top of characters towards: T T)op or L)eft	Press ⏎ .
Enter the print color: B B)lack or W)hite	Press ⏎ .
Field length: V F)ixed, V)ariable or O)pt fixed	Press ⏎ .

Format Entry Prompt	What You Do
Number of characters in the field:__(Max if variable)	Type **9** and press ⏎ .
Check digit: N G)enerate, V)erify or N)one	Press ⏎ .
Enter any fixed characters: _____	Press ⏎ .
Enter field number to use:__ Link: 1	Type **1** for the UPC-A bar code field and press ⏎ (if you have defined the fields in the same order as in this manual).
Formatting: A B)efore or A)fter	Type **B** and press ⏎ .
SRC: ABCDEFGHIJK DST:_____	Type **GHIJK** in the first 5 positions of the field, so the screen looks like:
SRC: ABCDEFGHIJK DST: GHIJK_____	This means: • You want to use digits 7-11 of the bar code, or source (**SRC**) field • You want to place the bar code digits in the first 5 positions of the merged, or destination (**DST**) field.

Format Entry Prompt	What You Do
Padding: N L)eft, R)ight or N)one	Type **L** and press ⏎ .
Enter pad character:_	Type **O** and press ⏎ .
Merge another field:_ Y)es or N)o	Type **Y** and press ⏎ .
Enter field number to use:__ Link: 2	Type **6** for the price field and press ⏎ (if you have defined the fields in the same order as in this manual).
Formatting: A B)efore or A)fter	Type **B** and press ⏎ .
SRC: ABCD DST:*****____	Type **ABCD** in the last 4 positions.

Format Entry Prompt	What You Do
SRC: ABCD DST:*****ABCD	This indicates: • You want to use all of the price data of the source field (excluding the price symbols. • You want to place the data in the last 4 positions of the merged, or destination (**DST**) field. (The asterisks indicate that you already used the first five positions for data from Field 01).
Padding: N L)eft, R)ight or N)one	Type **L** and press ⏎ .
Enter pad character:__	Type **0** and press ⏎ .
Merge another field:__ Y)es or N)o	Type **N** and press ⏎ .
Field 12: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est:__	You have completed the format for the sample tag.

Now you can:

- Type **T** and press ⏎ to print a tag with test data.
- Press F1 until you see the main menu. Then go to Data Entry mode to enter data and print a batch using the new format. The *Operator's Handbook* contains instructions for printing a format.

Entering a Graphic Field

Graphic fields are different from the other kinds of fields in a format because you can't type the data for a graphic field from the keyboard.

To print a graphic field (such as a company logo) on a tag or label, you download a graphics file from a host computer. Then you can enter a format that uses the graphics file.

After you have downloaded the graphics file, it will be stored in the printer's memory until you delete it. You do not have to download it each time you want to use it. For information about downloading a graphics file, see the *Operator's Handbook*. For information about creating a graphics file, see the *Programmer's Manual*.

The sample below shows a company logo printed as a graphic field.

To print a tag or label with a graphic field:

1. Starting at the Format Entry menu, define your supply type.
2. When you see the Field Definition screen, use the following steps to enter a graphic field.

Format Entry Prompt	**What You Do**
Field 01: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est:__	Type **G** and press ⏎ .
Enter location (inches) for 'Field #' H = 0.00 V = 0.00	Type the horizontal and vertical starting location for the graphic field.
Graphic Entry Mode ↓ Enter graphic name: GPH__ __	Press ↑ or ↓ until you see the name of the graphics file you want and press ⏎ .
	NOTE: The graphic name will be **GPH##** (the number corresponds to an ID contained in the graphic file). Your programmer should give you a list of graphic file names and what they print.
Field 02: P)rompt, F)ix, L)ine M)erge, S)ub, G)raph or T)est__	You have entered the sample graphic field.

Now you can:

- Type **T** and press ⏎ to test your format.
- Continue to define more fields.
- Go to Data Entry mode and print the graphic field on tags or labels.

Editing and Reviewing a Format

You can change any field in either offline or online formats.

NOTE: Changes in online formats only affect the format stored in the printer. The original format stored on the host computer does not change.

You can change a format any time except when it is being used by a batch that is printing or ready to print. You can also review the values set for a format without making any changes.

Editing also lets you:

- Copy a format.
- Add a field.
- Skip fields to get to the field you want to change.
- Delete a field.

To review or edit a format:

1. Select Format Entry from the main menu and press ⏎ . You'll see

```
Enter password:_____
```

2. Enter the 1-8 character security password and press ⏎ .

```
Format Entry Mode                ↓
Enter format name:_____  __
```

You'll see a blank for the format name.

3. Press ↓ until you see the name of the format you want to review or edit, then press ⏎ .

NOTE: Formats that were created online display an ID number on the screen nest to the format name.

You'll see the edit screen.

```
OLD format NAME: M
M)odify, D)elete or R)ename
```

M)odify Lets you edit or review the options of a format. See "Modifying a Format."

D)elete Erases the entire format from memory. See "Deleting a Format."

R)ename Lets you give the format a new name. See "Renaming a Format."

Modifying a Format

To modify a format:

1. Start from the edit screen

```
OLD format NAME: M
M)odify, D)elete or R)ename
```

Press ⏎ .

2. You'll see

```
Stock dimensions (inches)
Width = 2.00 Length = 2.75
```

This is the first screen for defining the supply. You can change any of the supply definitions, or press ⏎ at each supply definition screen to skip to the field definitions.

3. When you see the screen for the first field:

```
Field 01: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

You can:

- Press ⏎ to see the definitions for the first field.
- Press ↓ until you see the number of the field that you want to change, then press ⏎ to see the definitions for that field.

4. To change a field definition, you can:

- Press C to delete the old value. Then enter a new value and press ⏎ .
- Enter the new value over the old one and press ⏎ .
- Press ⏎ after each field definition to review it without changing anything.
- Press ↓ or ↑ to go forward or backward to a specific screen.

5. When you finish reviewing or editing, press F1 . This saves any changes and displays the Format Entry menu. Press F1 again to exit to the main menu.

Adding a Field

If you want to add a field to a format, you must add it after the last field in the format.

To add a field to a format

1. Start at the field definition screen:

```
Field 01: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

2. Press ↓ until you see the field number for the last field in the format.
3. Press ↓ again. The screen shows a new field number.
4. Select the type of field you want to define and enter the values.

Deleting a Field

To delete a field:

1. Start at the field you want to delete:

```
Field ##: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

2. Press ⊙⊙ , then press Ⓒ **(CLEAR)**. You'll see

```
Delete field #...
Are you sure [Y/N]: N
```

3. You can
   - Press ⏎ to keep the field.
   - Type **Y** and press ⏎ to delete the field.
4. The screen returns to the field definition screen for field 01.

Deleting a Format

To delete a format:

1. When you see the edit screen

   ```
   OLD format NAME: M
   M)odify, D)elete or R)ename
   ```

   Type **D** and press ⏎ .

2. You'll see

   ```
   Delete format NAME
   Are you sure [Y/N]: N
   ```

   - Press ⏎ to keep the format.
   - Type **Y** and press ⏎ to delete the format.

3. The screen returns to the format entry screen. Select another format to edit, or press F1 to display the main menu.

Renaming a Format

To rename a format:

1. Start from the edit screen

   ```
   OLD format NAME: M
   M)odify, D)elete or R)ename
   ```

   Type **R** and press ⏎ .

2. You'll see

```
Old name: NAME
New name:_____________
```

Type the new name for the format and press ⏎. You'll see the Format Entry screen.

Copying a Format

To copy a format

1. Start from the format entry screen

```
Format Entry Mode                ↓
Enter format name:_______       __
```

2. Press ↓ until you see the name of the format you want to copy.

3. Type the name for the new format and press ⏎. You'll see

```
COPIED format NAME
```

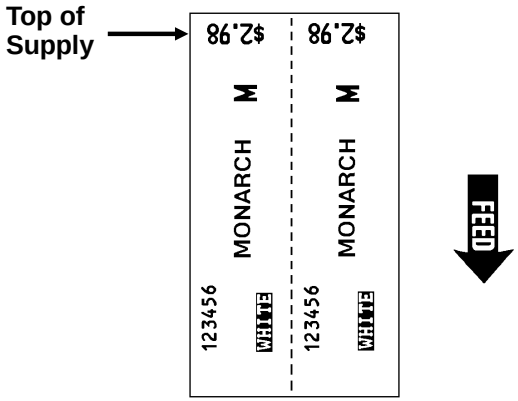
Then the screen displays the first screen of the new format with the values from the old format.

4. Now you can

- Make any necessary changes for your new format. Refer to "Editing and Reviewing Formats."
- Press F1 to save the new format to edit later. Press F1 again to return to the main menu.

Designing a Multiple Part Tag

You may want the same data to print more than once across the width of a tag. You might use a two-or three-part tag when a tag is divided in half or in thirds. This section uses a two-part tag as an example.



When you design a multiple part tag, you lay out only the left-most section. The printer repeats the design across the tag automatically.

There are four steps in creating a multiple part tag on your supply layout.

1. Prepare a Supply Layout, outlining the desired supply size. Then divide the supply into an equal number of printable parts.

Working on the left-most part of the tag:

2. Draw in the fields, showing font size, field length and rotation.

3. Mark the start (horizontal/vertical) location points of each field.

4. Record the elements of your design for each field.

The following section uses these four steps in the design of a sample two-part tag.

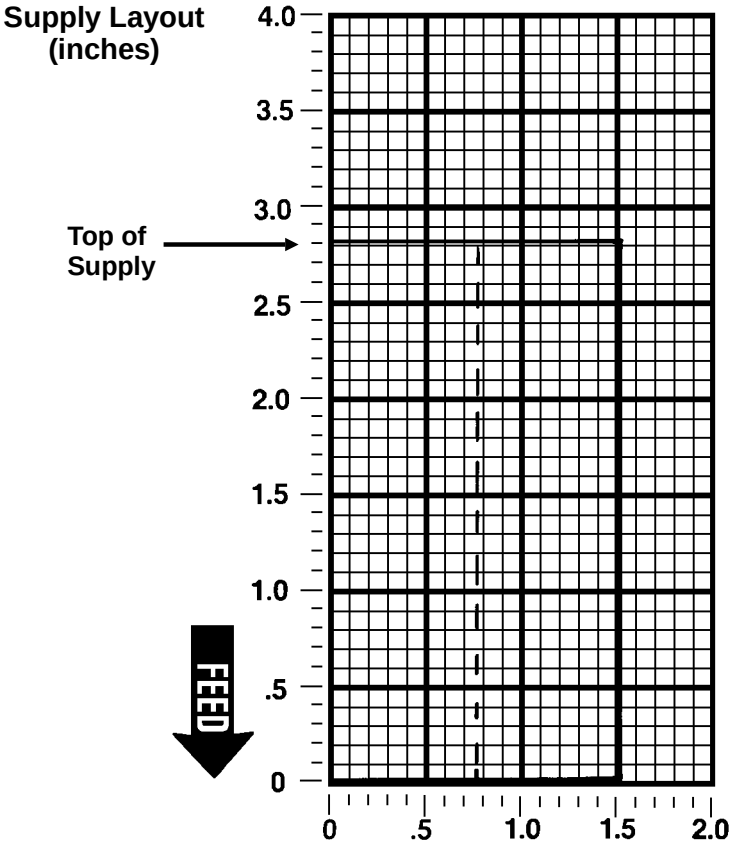
Sample Two-Part Tag

Here are the four steps for creating a two-part tag with four fields.

1. Using a Supply Layout form:

- Outline the size of your supply.
- Draw a line down the middle of the supply, dividing it into two equal parts. This represents the two-part printing.

The sample layout shows 1.5 inches wide by 2.75 inches long as the supply size.

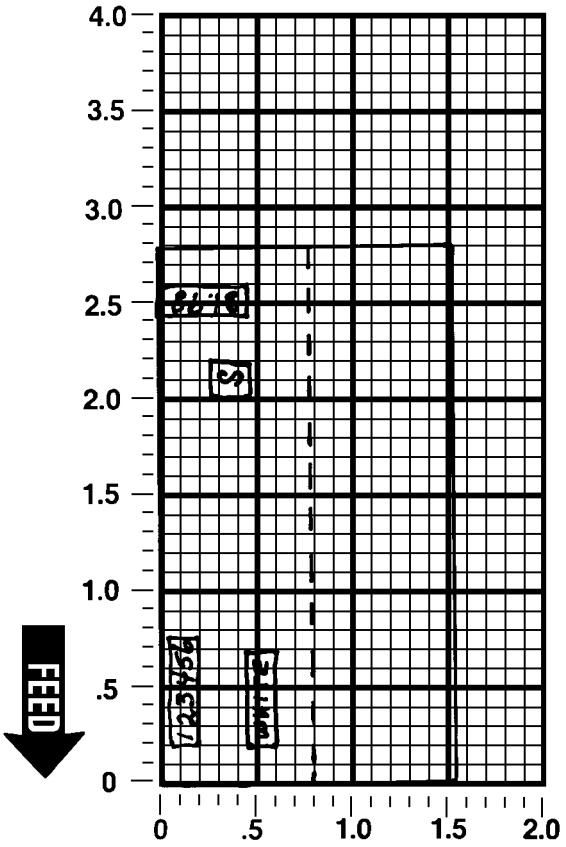


2. Draw fields for the left part of the supply.

The sample layout shows the position and approximate size of the four fields. The top of characters is toward the top of the field (TOP). The fonts and top of field for each field are:

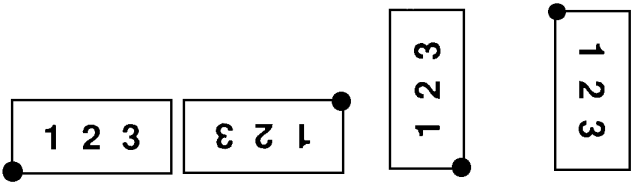
Field 1	Standard 1x font, 6 digits, top of field = Left.
Field 2	Bold 1x font, 1 character, top of field = Left.
Field 3	Standard 1x font, 5 characters (max.), top of field = Left.
Field 4	Reduced 2x font, 5 digits; top of field = Bottom.

Supply Layout (inches)



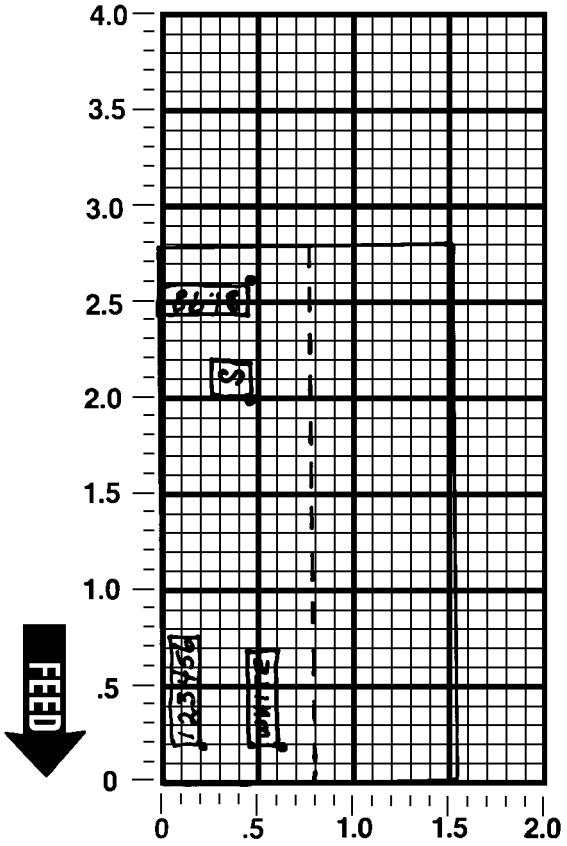
3. Mark the start locations (horizontal/vertical points) of each field. The illustration below shows which coordinates to use for each field rotation.

If the field rotation is:	Use the coordinates for the:
Top	Lower left corner of the field
Left	Lower right corner of the field
Bottom	Upper right corner of the field
Right	Upper left corner of the field



The following layout shows the start location (horizontal/vertical point) for each field.

Supply Layout (inches)



4. For each field, record the elements of your design. You'll use these to enter your multiple part tag format.

We used the following design elements for the sample two-part tag.

Option	Value
Supply size	1.5 x 2.75
Number of parts	2
Cutting	Yes
Cut multiple	1
Print quantity	Leave blank (Press ⟐)

The fields are defined as shown in the following table.

Option	Field 1	Field 2	Field 3	Field 4
Field nn	P	P	P	P
Prompt	SKU	SIZE	COLOR	PRICE
H/V location	0.2/0.2	0.5/2.0	0.6/0.2	0.5/2.6
Top of field	L	L	L	B
Field Type	T	T	T	T
Font Type	S	B	S	R
Font magnification	1	1	1	2
Top of characters	T	T	T	T
Enter the print color	B	B	W	B
Cost code	N	N	N	N
Price field	N	N	N	Y
Time/date field	N	N	N	-
Field length	F	F	V	-
# of characters	6	1	5	5*
inc/dec field	N	N	N	-
Check digit	N	N	N	-
Verify field	N	N	N	N
Data type	N	E	A	-
Fixed characters	**ENTER**	**ENTER**	**ENTER**	-

* Length includes the monetary symbols for price fields.
- Option is not available for this field type.
ENTER = Press ⟐ to skip this option.

If you want to print a test sample of the two-part tag:

- Enter the field definitions above.
- When you see the first Field Definition screen

```
Field 01: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

Type **T** and press ⏎ .

The two-part tag will print with test data in the fields.

4. Printing Online

Online mode lets you transmit format, batch, and graphic data to the printer from a host computer. Batch data is sent to the print queue and printing then starts automatically.

Your *Programmer's Manual* contains the information required for sending formats and batch data. The list below shows features that are available offline, but not available in online mode.

- Sub-fields, merge fields, and cost code fields are not available.
- Date and time fields are treated as regular text fields; you must supply the date or time in the batch data for printing.
- All check digits must be sent online for each field requiring a check digit.
- Only certain font sizes are available online. Refer to the *Programmer's Manual* for the font sizes.

To begin Online mode:

1. Make sure you set the online options in the printer to match the host computer. For setting these options, see "Setting the Online Parameters."
2. Connect the RS-232 cable interface to the printer and your terminal device.
3. Display **Online** on the main menu by pressing ⓘ until you see

Select Operating Mode: ↕ Online _

4. Press ⏎ to select Online. You'll see

Online Mode Ready:

The printer remains online until transmission is complete. Printing begins immediately. However, the printer ignores any batch in error, or batches for which a format does not exist. To interrupt transmission press F1. Press ⏎ to return to the main menu.

During transmission, the printer may display messages such as:

Format in use.
Waiting to complete print...

Waiting to store format.

Waiting to store batch.

Waiting to store graphic.

These are status messages and do not affect printer operation.

Auto-online Mode

If your printer is set for Auto-online mode, the printer is online as soon as you turn it on.

To print in Auto-online mode:

1. Make sure your host computer is ready to sent the data.

2. Turn the printer on. After the printer displays the copyright message, you'll see

Online Mode Ready:

3. Batches begin to print as soon as they are sent from the host computer.

When all batches have finished printing, you can

- turn the printer off
- exit Auto-online mode

To exit Auto-online:

4. With the display showing Online Mode Ready, press F2. You'll see

```
Enter password:_____
```

5. Type the 1-8 character password and press ↵.

   NOTE: When you first receive the printer, the password is ONLINE. To change the password, refer to "Changing Passwords."

   You'll see the Main Menu.

For more information about Auto-online mode, see section 5, "Configuring the Printer."

Online Errors

If there are format or batch errors, an error message is displayed for ten seconds. The format or batch in error is not saved. Data reception then continues with the remaining batches.

NOTE: Printer faults or syntax errors in format data will take the printer offline if you are not using Auto-online mode. If you are using Auto-online mode, the printer remains online. Examples of printer faults are: Check Supply, Check Ribbon, etc.

5. Configuring the Printer

You can set specific printer features to match your operation.

Check digits	Lets you enter various check digit calculation schemes to generate check digits. See "Defining a Check Digit."
Passwords	One password function lets you change passwords for Format Entry, Printer Configuration, and Auto-online modes. The other function lets you look at the passwords. See "Changing Passwords" or "Displaying Passwords."
Time	Sets the time prompt to appear during daily startup. See "Setting the Time."
Date	One date function lets you set the date prompt to appear during daily startup. The other function lets you select the format for entry and printing of the date. See "Setting the Date" and "Selecting the Date Format."
Online	Sets the online communication options to match the host computer. See "Setting the Online Parameters."
Clear Batch Memory at Power-up	Clears batches automatically at power up. See "Clearing Batch Memory at Power-up."
Clear Batch Memory Immediately	Clears all batches in memory immediately. See "Clearing Batch Memory Immediately."
9420/9440 Imaging	Changes the format imaging to match the 9420 and 9440 printers. See "Using 9420/9440 Imaging Mode."

9420/9440 Mode Changes the character spacing and field locations to match the 9420 and 9440 printers. See "Using 9420/9440 Compatible Mode."

Auto-online Sets the printer to automatically start online each time the printer is turned on. See "Using Auto-online Mode" (you'll only see this option if you use the Online password to get into Printer Configuration).

While in a function, you can cancel your entries by pressing F1. To exit to the main menu, press F1 again.

Defining a Check Digit

This option lets you define up to 12 calculation methods for check digits. If you use a check digit with incrementing or decrementing fields, the check digit is recalculated each time the field increases or decreases.

Two check digit calculation methods are already defined for you. You can use one of these methods, or define and use your own methods. You can also redefine the two calculation methods that are already entered.

1. From the main menu, press ↓ to display **Printer Configuration**. Press ↵. You'll see

   ```
   Enter password:_____
   ```

   Type the 1-8 character security password and press ↵.

   NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

```
Select Config Option:          ↓
Define Check Digit Schemes     __
```

Press ⏎ .

3. You'll see

```
CD Scheme Number [1-12]: 1
```

You can:

- type **1** or **2** and press ⏎ to redefine the existing check digit schemes
- type a number from **3-12** and press ⏎ to define a new check digit scheme.

4. You'll see

```
CD Calculation Method: A
Enter [A,B,C,D or E]
```

Press ⏎ to use calculation method A. Or, type another letter for the calculation method and press ⏎ .

A = Sum of product digits
B = Sum of products
C = AIS Bookstore*
D = SBC Bookstore*
E = ISBN Bookstore

* These calculation methods have 2 check digits. The other methods have 1 check digit. Be sure you allow for two check digits when you design your format if you are using calculation method C or D.

NOTE: When you select A, B, or E, skip step 5.

5. You'll see

```
CD Algorithm Option [A/B]: A
```

Press ⏎ to use option A. Or, type B and press ⏎.

A = Group A
B = Group B

6. You'll see the modulus screen.

```
CD Modulus [2-11]: 10
```

Press ⏎ to use a modulus of 10. Or, type a number from 2-11 as the modulus and press ⏎.

7. You'll see

```
Number of data digits: 10
[1-30]
```

Press ⏎ for 10 data digits. Or, type a number from 1-30 and press ⏎.

8. You'll see

```
Weights for each position:
7137137131
```

Press ⏎ to use the weights displayed. Or type the weights for each position and press ⏎.

You'll see the Configuration Options menu. To exit to the main menu, press F1.

Changing Passwords

You can use this function to change the password for Format Entry mode, Printer Configuration mode, or Auto-online mode. To change a password you must know that level (or a higher level) password. You need the Printer Configuration password to enter Printer Configuration.

- If you know the Printer Configuration mode password, you can change the Format Entry password, and the Printer Configuration password.
- If you know the Auto-online password, you can change the Format Entry password, the Printer Configuration password, and the Auto-online password.

If you change your password, **REMEMBER**:

- **Note your new password!**
- **You cannot return to the Change Password function without your new password.**

1. From the main menu, press ⓘ to display Printer Configuration. Press ⏎ . You'll see

```
Enter password:_____
```

Type the 1-8 character security password and press ⏎ .

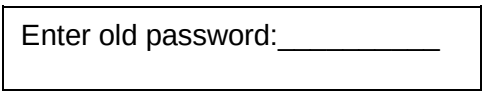
NOTE: When you first receive the printer,

- the Printer Configuration password is MANAGER
- the Auto-online password is ONLINE (you must enter the password ONLINE if you want to change the Auto-online password).

2. You'll see

Press ↓ until you see **Change Password(s)**. Press ⏎ .

3. You'll see

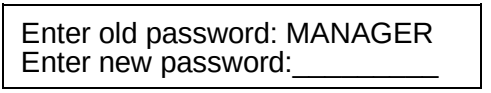


Enter the old password (1-8 characters), and press ⏎ .

NOTE: When you first receive the printer,

- M9400 is the password for Format Entry mode
- MANAGER is the password for Printer Configuration mode
- ONLINE is the password for Auto-online mode

4. You'll see the old password (for example, MANAGER)



Type 1-8 characters for the new password and press ⏎ . You'll see the message **New Password Recorded!** then you'll see the Configuration Options menu.

Press F1 to exit to the main menu.

Displaying Passwords

If you forget a password, you can display it if you know a higher level password. You need the Printer Configuration password to enter Printer Configuration.

- If you know the Printer Configuration mode password, you can display the Format Entry password and the Printer Configuration password.
- If you know the Auto-online password, you can display the Format Entry password, the Printer Configuration password, and the Auto-online password.

1. From the main menu, press ↓ to display **Printer Configuration** and press ↵. You'll see

```
Enter password:_____
```

NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. Type the password. You'll see the Configuration Option menu.

```
Select Config Option:  ↓
Define Check Digit Schemes
```

Press ↓ until you see **Display Password(s)**. Press ↵ to select this option. You'll see the Format Entry password.

```
Password(s):           ↓
M9400
```

You can:

- press ↓ to display the password for Printer Configuration
- press ↓ again to display the Auto-online password (if you used the password ONLINE to enter Printer Configuration)
- press ↵ to return to the Configuration Options menu.

Press F1 to exit the main menu.

Setting the Time

The time setting option lets you set the current time. It also causes a time prompt to appear at daily start up. The operator can then enter a new time at each startup.

At each startup, the printer starts at 00:00:00. The time advances only while the power is on. At the next daily start up, the operator must update the time.

1. From the main menu, press ↓ to display **Printer Configuration**. Press ↵. You'll see

```
Enter password:_____
```

Type the 1-8 character password and press ↵.

NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

```
Select Config Option:  ↓
Define Check Digit Schemes
```

Press ⓘ until you see **Set Time**. Press ⏎ to select this option and to display the time setting screen.

3. You'll see

```
Enter new time:  03:29:25
(HH:MM:SS)
```

4. Press ⓒ. You'll see

```
Enter new time:  __:__:__
(HH:MM:SS)
```

5. Press ⏎. You'll return to the Configuration Options menu.

Press Ⓕ1 to exit to the main menu.

Clearing the Time Prompt

If you don't want the time prompt to appear at startup:

When you see the time setting screen

```
Enter new time:  03:29:25
(HH:MM:SS)
```

1. Press ⓒ. You'll see

```
Enter new time:  __:__:__
(HH:MM:SS)
```

2. Press ⏎. You'll return to the Configuration Options menu.

Press Ⓕ1 to exit to the main menu.

Setting the Date

The date setting option lets you set the current date. It also causes a date prompt to appear at daily startup. The operator can then enter a date.

At each startup, the printer starts at 01/01/89. The advances while the power is on. At the next daily startup, the operator must enter the current date.

1. From the main menu, press ↓ to display Printer Configuration. Press ⏎ . You'll see

```
Enter password:_____
```

Type the 1-8 character password and press ⏎ .

NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

```
Select Config Option:          ↓
Define Check Digit Schemes     _
```

Press ↓ until you see **Set Date**. Press ⏎ to select this option.

3. You'll see

```
Enter new date:  08/09/89
(MM/DD/YY)
```

4. Enter the month, day, and year. Use leading zeros for single digits, e.g. 021489 for 02/14/89. Press ⏎ . You'll return to the Configuration Options menu.

Press F1 to exit to the main menu.

Clearing the Date Prompt

If you don't want the date prompt to appear at startup:

When you see the date setting screen

```
Enter new date: 08/09/89
(MM/DD/YY)
```

1. Press ⓒ . You'll see

```
Enter new date: __/__/__
(MM/DD/YY)
```

2. Press ⏎ . You'll return to the Configuration Options menu.

Press F1 to exit to the main menu.

Selecting the Date Format

When you set the printer to display the Date prompt, the date format is preset at MMDDYY. This option lets you select one of five formats. The printer automatically inserts the slashes at printing.

1. From the main menu, press ↓ to display **Printer Configuration**. Press ⏎ . You'll see

```
Enter password:_____
```

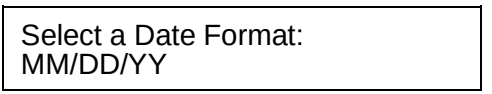
   Type the 1-8 character password and press ⏎ .

   NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

Press ↓ until you Select Date Format. Press ⏎ to select this option.

3. You'll see the date format selection screen.



The selections are:

MM/DD/YY
MM/YY/DD
DD/MM/YY
DD/YY/MM
YY/MM/DD
YY/DD/MM

Press ↓ until you see the date format you want, then press ⏎ . You'll automatically return to the Configuration Options menu.

Press F1 to exit to the main menu.

Setting the Online Parameters

Before entering the online parameters for the printer, see your programming consultant. You must match the printer parameters to those of the host computer.

The online parameters to be set are:

Parameter	Printer Default
Baud rate	2400
Parity	NONE
Wordlength	8
Stop bits	1
Start (XON) character	17
Stop (XOFF) character	19

1. From the main menu, press ↓ to display **Printer Configuration**. Press ⏎. You'll see

```
Enter password:_____
```

Type the 1-8 character password and press ⏎.

NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

```
Select Config Option:          ↓
Define Check Digit Schemes     _
```

Press ↓ until you see **Host Port Configuration**. Press ⏎ to select this option. With each parameter, you can enter a new selection, or just press ⏎ to keep the value that is displayed.

3. You'll see the Host Option menu and the first online parameter.

```
Select Baud Rate:
2400
```

Press ↓ or ↑ until you see the baud rate you need, then press ⏎ . You'll see

```
Enter Parity: N
N)one, O)dd or E)ven
```

4. Type the parity you need and press ⏎ . You'll see

```
Enter Word Length [7-8]: 8
```

5. Type the word length you need and press ⏎ . You'll see

```
Enter Stop Bits [1-2]: 1
```

6. Type the stop bits you need and press ⏎ . You'll see

```
Enter Start (XON) character:
17
```

7. Enter a number from 1-127 for XON flow control, or 128 for DTR flow control. You'll see

```
Enter Stop (XOFF) character.
19
```

8. Type a number from 1-127 for XOFF flow control, or 128 for DTR flow control and press ⏎ .

NOTES:

- If you select DTR control (128) as the XON character, you must also select DTR as the XOFF character. If you do not select DTR as the XOFF character, XON changes back to the default character (17).
- The Start and Stop characters must be set for DTR flow control for IBM PC equipment.

You'll see the Configuration Options menu.

Press F1 to exit to the main menu.

Adjusting the Print Contrast

You can adjust the print contrast to darken or lighten printing. You can also print a test tag to check the adjustments you make. The adjustment range is from -99 (lighter) to +20 (darker).

NOTE: The normal print contrast setting (+00) prints accurate bar codes on most tag or label stock. If you change the print contrast, use a bar code verifier to be sure your bar codes scan correctly.

1. From the main menu, press ↑ or ↓ to display **Data Entry**.
Press ⏎ . You'll see

```
Data Entry Mode                ↓
Select Format: NAME            _
```

2. Press F2 . You'll see

```
Enter password:_ _ _ _ _ _ _ _
```

3. Type the 1-8 character password and press ↵ .

NOTE: When you first receive the printer, the password is **M9400**. You'll see the last setting, for example

```
↓ Print Contrast Adjustment ↑
            +00
```

4. You can

- press C to reset the print contrast to 0
- press ↑ to increase the print contrast 1 step
- press ↓ to decrease the print contrast 1 step
- press ↵ to print a test tag. You must have at least one format defined to print a test tag.

5. Press F1 or F2 to exit to the Print Contrast menu.

Clearing Batch Memory at Power-up

Use this function to clear batch memory automatically each time the printer is turned on.

NOTE: If you enable this function, any batches waiting to print when the printer is turned off will be lost.

1. From the main menu, press ↓ to display **Printer Configuration**. Press ↵ , you'll see

```
Enter password:_____________
```

Type the 1-8 character password and press ↵ .

NOTE: When you first the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

```
Select Config Option:                ↓
Define Check Digit Schemes           __
```

Press ↓ until you see **Clear Batch Memory At Power-Up**. Press ⏎ to select this option.

3. You'll see the last selection, for example

```
Clear batches at power-up: D
E)nable or D)isable
```

- Type **D** and press ⏎ if you do not want batch memory to be erased each time the printer is turned on.
- Or, type **E** and press ⏎ if you want all batches in memory to be erased each time the printer is turned on.

You'll see the Configuration Options menu.

Press F1 to exit to the main menu.

Clearing Batch Memory Immediately

Use this function to clear all batches from memory.

1. From the main menu, press ↓ to display **Printer Configuration**. Press ⏎, you'll see

```
Enter password:_______________
```

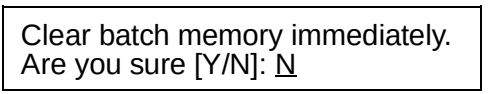
Type the 1-8 character password and press ⏎.

NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

Press ↓ until you see **Clear Batch Memory** Immediately.
Press ⇨ to select option.

3. You'll see



- Press ⇨ if you want to keep the batches.
- Type **Y** and press ⇨ if you want to erase all batches from memory.

You'll see the Configuration Options menu.

Press F1 to exit to the main menu.

Using 9420/9440 Compatible Mode

9420/9440 compatible mode lets you use your 9425, 9445, or 9465 printer to print formats designed for the 9420 or 9440 printer with no change in spacing. Selecting 9420/9440 mode changes:

- characters from proportional (as on the 9425, 9445, 9465 printers) to monospaced (as on the 9420 and 9440 printers)
- horizontal field location from starting at the nearest dot (as on the 9425, 9445, 9465 printers) to starting at the nearest 8th dot (as on the 9420 and 9440 printers)

You'll find more information about proportional and monospaced fonts and horizontal field location in "Prompts Reference" and in the *Format Design Tools* manual.

1. From the main menu, press ↓ to display **Printer Configuration**. Press ⏎. You'll see

```
Enter password:_____________
```

Type the 1-8 character password and press ⏎.

NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

```
Select Config Option:                ↓
Define Check Digit Schemes           __
```

Press ↓ until you see **9420/9440 Compatible Mode**. Press ⏎ to select this option.

3. You'll see the previous selection, for example

```
9420/9440 Compatible Mode: E
E)nable or D)isable
```

4. Either

- type **E** and press ⏎ to print 9420/9440 fonts and horizontal field location
- type **D** and press ⏎ to print 9425/9445/9465 fonts and horizontal field location.

You'll see the Configuration Options menu.

Press F1 to exit to the main menu.

Using 9420/9440 Imaging Mode

9420/9440 imaging mode lets you use your 9425, 9445, or 9465 printer to print formats that have overlapping fields.

When data changes on a tag, the 94X5 printers treat the format differently than 94X0 printers.

- The increase print speed, the 9425/9445/9465 printers re-draw ("re-image") only the parts of a format that have been changed. A field in which data was changed could be redrawn over a field in which no data was changed.

  For example, a bar code could be designed with the human readable characters printed as a separate field overlapping part of the bars. If the bar code data is changed, the bar code could be redrawn over any human readable characters that did not change.

- In 9420/9440 imaging mode, the entire format is always re-imaged. Overlapping fields are not negatively affected, but printing is not as fast.

1. From the main menu, press ↓ to display **Printer Configuration**. Press → . You'll see

Enter password: _____

Type the 1-8 character password and press → .

NOTE: When you first receive the printer, the password is MANAGER or ONLINE.

2. You'll see the Configuration Options menu.

Select Config Option: Define Check Digit Schemes

Press ↓ until you see **9420/9440 Imaging Mode**.
Press → to select this option.

3. You'll see the previous selection

```
9420/9440 Imaging Mode: D (or E)
E)nable or D)isable
```

4. Either

- type **E** and press ⏎ to print a format with overlaid fields
- type **D** and press ⏎ to print formats without overlaid fields.

You'll see the Configuration Options menu.

5. Press F1 to exit to the main menu.

Using Auto-online Mode

Auto-online starts the printer in Online mode each time it is turned on. You can turn the Auto-online function on (**Enable**) or turn it off (**Disable**) with the following steps.

1. From the main menu, press ↓ to display **Printer Configuration**. Press ⏎, you'll see

```
Enter password:_____________
```

Type the 1-8 character password and press ⏎.

NOTE: When you first receive the printer, the password is ONLINE.

2. You'll see the Configuration Options menu.

```
Select Config Option:          ↓
Define Check Digit Schemes     __
```

Press ↓ until you see **Auto Online Mode**. Press ↵ to select this option.

3. You'll see the previous selection

```
Auto online mode: E
E)nable or D)isable
```

4. Either

- type **E** and press ↵ to start in Online mode each time the printer is turned on
- type **D** and press ↵ to start at the main menu each time the printer is turned on.

You'll see the Configuration Options menu.

Press F1 to exit to the main menu.

Exiting Auto-online Mode

If you are printing in Auto-online mode, you must exit Auto-online before you can disable the function in **Printer Configuration**. (If you don't exit Auto-online, the printer doesn't display the main menu.) To exit Auto-online mode:

1. With the display showing **Online Mode Ready**, press F2 . You'll see

```
Enter password:_____
```

2. Enter the 1-8 character password and press ↵ .

NOTE: When you first receive the printer, the password is ONLINE.

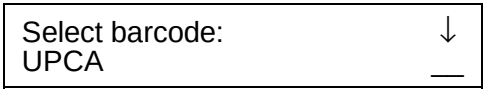
You'll see the Main Menu. Press ⓘ to display **Printer Configuration**, then select **Auto Online Mode** and disable the function.

6. Prompts Reference

This section describes each of the design elements used in format entry. Each discussion includes the Format Entry prompt, and the selectable values. This section is in alphabetical order by prompt or field contents.

Bar Code Type

Format Entry Prompt:



Values:

UPC-A (Standard, +2, or +5)
UPC-E (Standard, +2, or +5)
Interleaved 2 of 5
Code 39
NW7
EAN-8 (Standard, +2, or +5)
EAN-13 (Standard, +2, or +5)
CODE128
MSI

For the density of the bars and bar height, see "Bar Code Density" and "Bar Code Height" later in this section.

All bar codes require a white space called the *quiet zone* for successful scanning. The minimum quiet zone is .10 inches from the left and right edges of the supply to the printed bars. See "Field Location" later in this section for more information.

To set human readable characters for UPC and EAN type bar codes, see "Bar Code - Human Readable Characters."

To print human readable characters for Code 39, Interleaved 2 of 5, NW7, Code 128 and MSI bar codes, you must create a sub-field. See "Sub-fields" later in this section.

NOTES:

1. It is possible to print a UPC-A bar code rotated 180 degrees on 1.2 inch width supply, but the quiet zone will be less than the minimum specification.

2. Code 39 and Code 128 bar codes accept a space as valid data. If you are using fixed data for either of these bar codes, you can use the shift/space key to insert a (reserved space) in the fixed data.

3. To print human readable characters for UPC and EAN bar codes, see "Bar Code - Human Readable Characters."

4. To print human readable characters for Code 39, Interleaved 2 of 5, NW7, Code 128 and MSI bar codes, you must create a sub-field. See "Sub-fields" later in this section.

5. If you define a sub-field as a standard UPC or EAN bar code field, the printer automatically fills the field from the left with zeros to complete the bar code if necessary. UPC or EAN +2 or +5 bar codes do not automatically fill from the left.

Bar Code Density

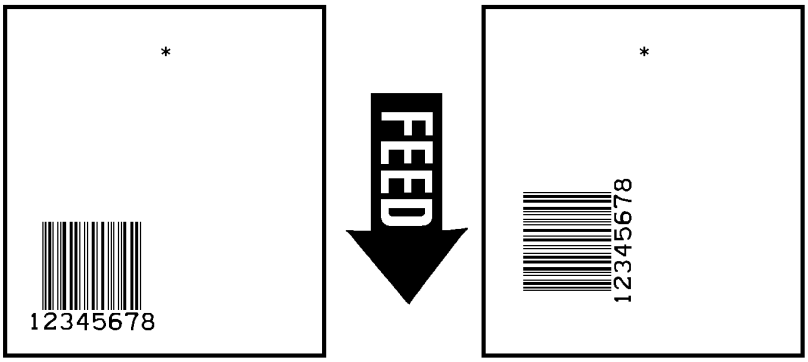
Format Entry Prompt:

```
Barcode density [1-5]:_
```

Values:
1-5 (Code 39)
1-4 (Interleaved 2 of 5)
1-3 (Code 128)
1-3 (MSI)

This prompt applies only to Code 39, Interleaved 2 of 5, Code 128 and MSI. The density is pre-set for UPC-A, UPC-E, EAN-8, EAN-13 and NW7 bar codes.

Because there are more dots per horizontal inch on the printhead of the 9465 printer, parallel bar codes have a higher density than serial bar codes. The sample tags below show the difference between parallel and serial bar codes.



Parallel Bar Code **Serial Bar Code**

The following tables show the densities for parallel and serial bar codes.

Bar Code Densities (Parallel Print)

Value	Bar Code	Density (Char/in)
1	Code 39 I 2 of 5 Code 128* MSI	9.07 16.45 11.96 (alphanumeric) 23.92 (numeric only) 9.40
2	Code 39 I 2 of 5 Code 128* MSI	4.54 9.40 7.97 (alphanumeric) 15.95 (numeric only) 7.31
3	Code 39 I 2 of 5 Code 128* MSI	5.48 6.75 5.98 (alphanumeric) 11.96 (numeric only) 5.48
4	Code 39 I 2 of 5	16.45 4.11
5	Code 39	8.22

* For more information on Code 128, see Appendix A of the *User's Manual*.

Bar Code Densities (Serial Print)

Value	Bar Code	Density (Char/in)
1	Code 39 I 2 of 5 Code 128* MSI	9.07 16.45 11.96 (alphanumeric) 23.92 (numeric only) 9.40
2	Code 39 I 2 of 5 Code 128* MSI	4.54 9.40 7.97 (alphanumeric) 15.95 (numeric only) 7.31
3	Code 39 I 2 of 5 Code 128* MSI	5.48 6.75 5.98 (alphanumeric) 11.96 (numeric only) 5.48
4	Code 39 I 2 of 5	16.45 4.11
5	Code 39	8.22

* For more information on Code 128, see Appendix A of the *User's Manual*.

Bar Code Height

Format Entry Prompt:

```
Barcode height: 0.00
```

Values:	inches	0.2 to 4.0
	millimeters	5.1 to 102
	dots	39 to 999

You can vary the height of the bars for any of the available bar codes. Keep in the mind the size of the supply being used, and the other fields around the bar code.

Bar Code - Human Readable Characters

Format Entry Prompt:

Human Readable Characters: N A)bove, B)elow or N)one

Values: A, B, or N

This option applies only to the UPC and EAN bar codes.

If you choose to print the extended characters (number system digit and check digit), do not locate the bar code within 0.15 inch of another field or the edge of the tag. Without extended characters, this restriction is 0.10 inch.

Below are examples of printing human readable characters.

Above **Below** **None**

Check Digits

Format Entry Prompt:

```
Check Digit N
G)enerate, V)erify, or N)one
```

Values:
G = printer automatically calculates
V = operator must enter a check digit
N = no check digit

A check digit verifies that the operator enters correct data. You can use check digits with any field except Date and Time fields. Yo can specify whether the check digit is to be generated automatically by the printer (**G**), or entered by the operator (**V**).

- If you choose **V)erify**, the operator must enter a check digit during data entry. The printer calculates a check digit and compares that to the data entered. If the check digit is incorrect, the printer will not accept the data.
- If you choose **G)enerate**, the printer calculates a check digit and prints it as part the field.

NOTE: *Before* choosing **V)erify** check digit for Code 39, Interleaved 2 of 5, NW7, Code 128, or MSI bar codes, be sure the check digit calculation scheme you want has been defined in Printer Options. See "Defining a Check Digit" in Section 5. User-definable check digits cannot be used with UPC and EAN bar codes.

- UPC and EAN bar codes automatically generate a check digit of their own, even if you choose **N)one**. You *can* specify **V)erify** for UPC or EAN if you want to.

If you choose to increment or decrement a Code 128 or MSI bar code field, do not select **V)erify** check digit. The check digit entered by the operator would be incorrect as soon as the field increments or decrements the first time. You do not have the option to increment or decrement UPC or EAN bar codes.

Check Digit Scheme

Format Entry Prompt:

```
CD Scheme Number [1-12]: 1_
```

Values: 1-12

This prompt lets you select a scheme for calculating a check digit. A check digit scheme is required when you want a check digit for Code 39, Interleaved 2 of 5, and NW7 bar code fields; or for text fields containing numeric data. You must also select a check digit scheme if you want a *verify* check digit for Code 128, and MSI bar codes.

Before making a selection, be sure the check digit calculation scheme you want has been defined in Printer Options. Refer to the *Operator's Handbook* for procedures for entering check digit schemes.

When you select a check digit scheme, you must mark the positions to be used in the calculation.

```
Mark positions to be used:
XXXXXXXXXX_
```

Type an X for each position to be used, leaving a space in the location where you want the check digit. Press . In the example above, we use the first 10 positions, and leave position 11 for the check digit.

NOTE: The field length you enter must contain *at least* one more digit than the scheme uses. The extra position is for the check digit. This extra (blank) position may be in anywhere in the field.

Mark the position where you want a check digit to print.

```
Enter a 'C' in CD position(s):
XXXXXXXXXXC
```

Type a **C** and press ⏎ . The underlines include an extra space for the check digit. Above, the check digit is set to print at the end of the field. However, it may be placed in any position.

Cost Code Field

The cost code feature translates data entered by the operator to a code that is printed on the supply.

You must also define a translation table in Printer Options to use this feature. To define a translation table, refer to "Defining a Cost Code" in the *Operator's Handbook*. When defining your translation, the type of data the operator enters must match the data type in the translation table. For example, if your translation table has numeric data as the "entered data" for data entry, you must define the cost code field in the format as numeric.

At data entry, the operator will see the prompt for that field, for example:

```
COST CODE?___
```

The underscores represent the number of characters the operator can enter. For example, if the operator enters 159, the translated code printed might be PTS.

NOTE: The cost code feature cannot be used with sub-fields or merged fields. The translation only occurs in the cost code field.

Data Entry Prompt

Format Entry Prompt:

```
Data entry prompt:_____
For 'Field 01' press ENTER
```

Values; 1 - 12 characters

The *Data Entry prompt* is the word or words displayed to the operator at data entry. This prompt asks the operator to enter specific data. At data entry, underscores also appear with the prompt to indicate the maximum number of characters the operator may enter. The maximum number of characters is set at the *Number of Characters* prompt. See "Number of Characters" later in this section.

This field is optional. If you press only, the printer assigns the prompt "Field nn" (*nn* represents the numeric order in which the field appears in the format).

Date and Time Fields

Format Entry Prompt:

```
Time or date field: N
T)ime, D)ate or N)o
```

Values: T = Time (4 digits)
D = Date (6 digits)

The time and date entered at daily startup (or set in Printer Configuration) are retrieved for use at data entry. At data entry, if the tie or date field is a **P** (prompt) field, the operator can change the data shown, or press ⏎ only to accept the data. If the time or date field is an **F** (fixed) field, no prompt is displayed, but the time or date is printed on the tag automatically.

If the operator enters the time and date at daily startup, the printer displays the current time and date.

If time and date are not entered at daily startup, the printer uses whatever time exists in memory at data entry. The operator can change the date and time for each batch during data entry. However, the data is not stored, and must be re-entered for each batch.

NOTE: To reset the time and date to appear at startup, see Section 5, "Configuring the Printer."

Field Length

Format Entry Prompt

```
Field length: V
F)ixed, V)ariable or O)pt fixed
```

Values: F = Fixed
V= Variable
O = Optional fixed

This option specifies fixed length, variable length, or optional fixed length for a field.

Fixed A field that cannot be left blank during data entry. The operator must fill all the positions.

Variable An optional field. During data entry, the operator may enter any number of characters up to the maximum length. Or, the operator may press ⏎ to leave the field blank. For example, if the maximum length is 5, the operator can enter 0-5 characters.

Optional fixed Also an optional field. During data entry, the operator may enter any number of characters up to the maximum length. Or, the operator may press ⏎ to leave the field blank. For example, if the maximum length is 5, the operator can enter 0-5 characters.

Field Location

Format Entry Prompt:

```
Enter location (inches) for
'Field 01' H = 0.00 V = 0.00
```

Values:

Minimum			
	Inches	**MM**	**Dots**
Horz.	0.06	1.50	16
Vert.	0.00	0.00	00

Maximum			
	Inches	**MM**	**Dots**
Horz.	4.24	107.9	1119
Vert.	7.99	203.1	1535

The maximum horizontal and vertical values you can use depend on the supply size you're using.

For each field you want to print, specify the beginning horizontal and vertical location. You can enter whole units and a decimal unit, or a decimal unit only. Do not enter a decimal point.

Enter the location in English units, Metric units, or dot units. Use hundredths of an inch for English decimal units. The printer must be set up for the type of units you want to use. See "Supply Options" in Section 1.

If the horizontal or vertical values are not within the printable boundaries of the supply specified, you'll see an error message. You must go back and change the location or other related options which affect the printing.

NOTE: If you choose to print the extended characters of a bar code (number system digit and check digit), do not locate the bar code within 0.15 inch of another field or the edge of the tag. Without extended characters, this restriction is 0.10 inch.

Do not use a vertical location of less than 0.065 inch (1.5 mm) for **serial** bar codes. A vertical location less than 0.06 inch could result in an invalid bar code.

Field Types

Format Entry Prompt:

```
Enter type of field: T
T)ext or B)arcode
```

Values: B = Barcode field
T = Text field

Prompted field types fall into two categories: bar codes and text fields. Any prompted field that is not a bar code field is a text field. For more information see "Bar Code Type" and "Text Fields" in this section.

Fixed Characters

Format Entry Prompt:

Enter any fixed characters: (underlines for field length)

Values: Up to the maximum number of characters specified for the field. Or, press ⏎ only to skip this prompt.

Fixed characters appear in the data field and remain constant. You can enter fixed characters for any field except price, date or time. The operator cannot change fixed characters during data entry. To insert a ␣ (reserved space) in fixed data, use the shift/space key.

Fixed characters appear to the operator at data entry with a prompt. The operator enters the remaining data. The combination of fixed characters and entered characters then prints on the supply.

Example: The vendor number 44218 always appears in a UPC-A bar code for a group of products to be marked. To save the operator time, enter 44218 at the *Fixed characters?* prompt. At data entry, the operator sees this number and enters the remaining digits (indicated by the underscores) for a specific item from that vendor.
*44218*_____

When defining fixed characters for most fields, you can enter any type of characters. For example, even if you define a field as numeric, you can enter alpha characters as the fixed characters. the exceptions are UPC, EAN or MIS bar code fields. The data for these fields must always be numeric.

To enter a fixed blank space, press the shift key, then press the space key.

You'll also see this prompt when you enter data for a fixed data field.

Fixed Data Field

A fixed data field contains information that remains constant. The operator does not see a prompt for a fixed data field during data entry, but the contents of the field prints automatically when the batch is printed.

Note the following about fixed fields:

- If you do not enter characters at the **Enter any fixed characters:** prompt, your data will print incorrectly during batch printing.
- For time or date fields, the current time or date is used.
- Price fields are not available as fixed fields.

To define a fixed data field, select **F)ix** as the field type (at the field definition screen):

```
Field 01: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

When you see the prompt **Enter any fixed characters:** enter the actual data.

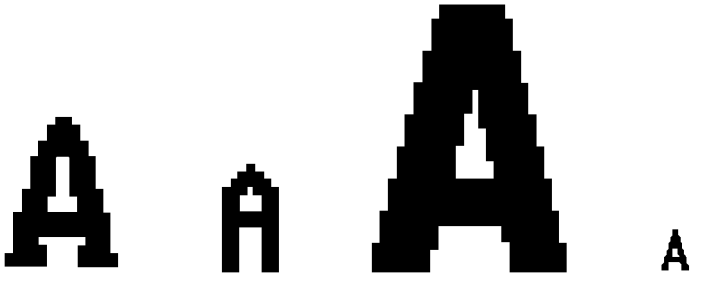
Fonts

Format Entry Prompt:

```
Select field font: S
S)td, R)educed, B)old, O)CR
```

Values:
S = Standard
R = Reduced
B = Bold
O = OCR

Below are examples of these fonts (print styles).



Standard **Reduced** **Bold** **OCR**

Printable Characters

Following are the printable characters (they are enlarged slightly to show detail).

NOTE: Human Readable 1 and Human Readable 2 are not available offline.

Font Magnification (Sizes)

Format Entry Prompt:

```
Select font magnification [1-10]: 1
```

Values: 1-10 (1x font size to 10x font size)

Font magnification determines the size of the font you select. A font magnification of 1 means the characters will print at normal size; a font magnification of 2 means that the characters print at two-times normal size, etc.

The following tables show the number of characters per inch for the 9425/9445/9465 fonts, and for the 9420/9440 fonts. The tables show each available magnification for the standard, reduced, and bold fonts. There is no magnification option for OCR font.

The 9425/9445/9465 fonts use proportional spacing (the letter l takes up much less space than the letter M). The characters-per-inch for your data will be somewhere between the value for l and the value for M. The 9420/9440 fonts use monospacing (every letter takes the same amount of space). The characters-per-inch value is the same regardless of the character.

9425/9445 Font Magnification

Size	Char	Standard	Reduced	Bold
1X	I M	21.3 12.0	64.0 24.0	19.2 7.1
2X	I M	10.6 6.0	32.0 12.0	9.6 3.5
3X	I M	7.1 4.0	21.3 8.0	6.4 2.3
4X	I M	5.3 3.0	16.0 6.0	4.8 1.7
5X	I M	4.2 2.4	12.8 4.8	3.8 1.4
6X	I M	3.5 2.0	10.6 4.0	3.2 1.1
7X	I M	3.0 1.7	9.1 3.4	2.7 1.0
8X	I M	2.6 1.5	8.0 3.0	2.4 0.8
9X	I M	2.3 1.3	7.1 2.6	2.1 0.7
10X	I M	2.1 1.2	6.4 2.4	1.9 0.7

9420/9440 Font Magnification

Size	Standard	Reduced	Bold
1X	12	24	6
2X	6	12	3
3X	4	8	2
4X	3	6	1.5
5X	2.4	4.8	1.2
6X	2	4	1
7X	1.7	3.4	0.86
8X	1.5	3	0.75
9X	1.3	2.6	0.66
10X	1.2	2.4	0.60

Graphics

This feature lets you print a graphics file that has been downloaded from a host computer. The file must already be stored in the printer. To print the graphic, select **G)raphic** at the field definition prompt:

Format Entry Prompt:

```
Field 01: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

Type **G** and press ⏎ .

```
Enter location (inches) for
'Field #' H = 0.00 V = 0.00
```

Type the horizontal and vertical starting location for the graphics field.

```
Graphic Entry Mode                ↓
Enter graphic name: GPH_          __
```

Press ↑ or ↓ until you see the name of the graphics file you want and press ⏎ .

NOTE: The graphic name will be **GPH##** (the number corresponds to an ID contained in the graphic file). Your programmer should give you a list of graphic file names and what they print.

After you download the graphics file, it is stored in the printer memory until you delete it (you can delete the file online only). You do not have to download it each time you want to use it. For information about creating a graphics file, see the *Programmer's Guide*.

Include Price Check Digit

Format Entry Prompt:

```
Include price check digit: N
Y)es or N)o
```

Values: Y=Yes
N=No

If you select **N** for **Include price check digit**, the bar code generates a standard UPC or EAN check digit. If you select **Y**, the bar code generates an additional check digit depending on whether you are defining a UPC or an EAN bar code field:

UPC European standard check digit

EAN Random Weight Format check digit.

Incrementing or Decrementing a Field

Format Entry Prompt:

```
Auto inc/dec field: N
I)ncrement, D)ecrement or N)o
```

Values:
- I = Increment
- D = Decrement
- N = No increment/decrement to occur

You can specify automatic incrementing or decrementing for any field, and specify the amount. However only the numeric data in the field increments or decrements.

NOTE: If you use a check digit with incrementing or decrementing fields, the check digit is recalculated each time the field increments or decrements.

```
Amount of inc/dec [0-999]:___
```

Enter the amount by which you want the field to increment and press ⏎ . Incrementing or decrementing begins at the right-most digit in the field.

Lines

This option provides a series of prompts to let you draw lines or a box around a field. To enter lines or a box, select **L)ine** at the field definition prompt:

Format Entry Prompt:

```
Field 01: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

Type **L** and press ⏎ .

```
Enter location (inches) for
'Field #' H = 0.00 V = 0.00
```

Type the horizontal and vertical starting location for the line.

```
Line: V
H)orizontal or V)ertical
```

Type **H** or **V** and press ⏎ .

```
Stop location V = 0.00
```

Type the stop location and press ⏎ . The screen displays an **H** or a **V** to indicate the direction of the line.

```
Width of line [1-15]:_
```

Enter a number from 1-15 and press ⏎ to define the width of the line. Examples of the widths follow.

Line Width Selections

Because the printer prints more dots per inch horizontally than vertically, the horizontal and vertical line widths are different.

Horizontal Line Widths

The following table shows the horizontal line widths.

Line Number	Appearance	Line Width	
		Inches	MM
1		.005	.13
2		.010	.26
3		.015	.40
4		.021	.53
5		.026	.66
6		.031	.79
7		.036	.92
8		.042	1.06
9		.046	1.16
10		.052	1.32
11		.057	1.44
12		.062	1.57
13		.067	1.70
14		.072	1.82
15		.078	1.98

Vertical Line Widths

The following table shows the vertical line widths.

Line Number	Appearance	Line Width	
		Inches	MM
1		.003	.076
2		.008	.177
3		.011	.279
4		.015	.381
5		.019	.457
6		.023	.558
7		.027	.660
8		.030	.762
9		.034	.863
10		.038	.939
11		.042	1.041
12		.046	1.143
13		.049	1.244
14		.053	1.346
15		.057	1.422

Merged Field

This option lets you merge up to 9 fields into one field. However, you can have only 26 characters in the final merged field. To define a merged field, select **M)erge** at the field definition prompt:

Format Entry Prompt:

```
Field 01: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

Type **M** and press ⏎ .

The merge feature provides pad characters to fill unused space in the field. You can use any character as the pad character. When using a pad character, you can elect to pad to the left or right of the overall data.

You also choose whether to merge the fields before formatting or after formatting. For example, to merge the department and price fields, merge them *before* formatting (before the dollar sign and decimal point are added to the price). *After* formatting would include the monetary symbols in the merged field.

When you select **M)erge** at the field definition screen, you'll see the following prompts.

```
Enter location (inches) for
'Field #' H = 0.00 V = 0.00
```

Type the location of the merged field. Continue to define the merged field. When you see

```
Enter field number to use:__
   Link: 1
```

Type a number from 1-63 for the field being merged and press ⏎ . This number must be *less* than the field you are now working on. You'll see

```
Formatting: A
B)efore or A)fter
```

Type **A** or **B** and press ⏎ .

B = Use the data as it is entered at data entry.

A = Use the data after it has been formatted for printing.

Next, you'll see

```
SRC: ABCDEFGHIJKL
DST:_____________
```

The letters that appear on the **SRC** (source) line represent the characters in the field you want to merge. The **DST** (destination) line represents the merged field. Type the letters that you want to use in the **SRC** line in the positions you want them to appear in the merged field.

If, for example:

- You want to use the characters in positions 1, 3, and 5 (A, C, and E) from the source field, and
- You want them to appear in positions 1, 2, and 3 in the merged field

Type A, C, and E so that the screen looks like this:

```
SRC:  ABCDEFGHIJKL
DST:  ACE_______
```

Then you'll see

```
Padding: N
L)eft, R)ight or N)one
```

Select the position of the padding character. You'll see

```
Enter pad character:__
```

Type the character you want to use for padding. You'll see

```
Merge another field:_
Y)es or N)o
```

Type **Y** to enter another field to use for the merged field, or **N** to return to format entry mode.

Number of Characters

Format Entry Prompt:

```
Number of characters in the
field:__(Max if variable)
```

Values: 1-30

This option sets the field length for all field types except Date or Time fields and fixed-length bar codes. If the field length is variable, enter the maximum length you'll need for the field you're defining.

For price fields, remember to include enough space for the pricing symbols ($. /) or for unit pricing, such as 3/$1.00.

Fields that use a check digit scheme must have **at least** one more character than the check digit scheme uses. See "Defining a Check Digit" in Section 5 more information about check digit schemes.

Price Field

Format Entry Prompt:

```
Price field: N
Y)es or N)o
```

Value:
Y = Yes
N = No
Press ⏎ to skip this prompt

When you specify a price field, the monetary symbol (such as the dollar sign and decimal) are generated automatically at data entry for printing. However, you must include the space for these symbols in your field length for the **Number of characters?** prompt.

For example, if you have a four-digit price, you must enter "6" as the number of characters in the field, to allow for the dollar sign and decimal.

At data entry, the prompt for a price field might look like this:

```
Price $.00
```

...or like this:

```
Price 0¢
```

Select using the cent sign (for amounts less than $ 1.00) in Printer Options mode. Refer to "Using the Cent Sign" in the *Operator's Handbook*.

International price fields must be at least 5 characters.

Print Color

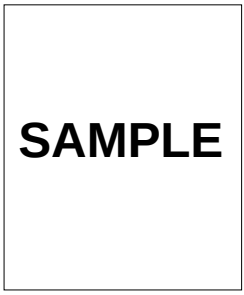
Format Entry Prompt:

```
Enter the print color B
B)lack or W)hite
```

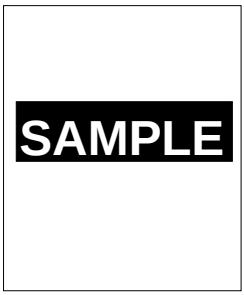
Values: B = Black characters
W = White characters with black background

Examples of these two colors follow.

Print Color Samples



Black



White (Reversed)

Stock Dimensions

Format Entry Prompt:

```
Stock dimensions (inches)
Width = 0.00 Length = 0.00
```

Minimum			
	Inches	**MM**	**Dots**
Horz.	0.75	19.1	198
Vert.	0.75	19.1	144

Maximum			
	Inches	**MM**	**Dots**
Horz.	4.24	108.0	1122
Vert.	8.00	203.2	1536

Enter the width and length of the stock you are using. The measurement units you use depends on the units you selected in Printer Options. You can enter whole units and a decimal unit for English or metric units, or a decimal unit only. Do not enter a decimal point.

Sub-fields

Format Entry Prompt:

```
Field 01: P)rompt, F)ix, L)ine
M)erge, S)ub, G)raph or T)est_
```

To define a sub-field, type **S** and press ⏎ .

A *sub-field* contains data copied from the data of a regular field. The sub-field prints as a separate field. The operator enters only the data for the regular field.

Define each sub-field as discussed in section 3, "Entering a Format."

When defining a sub-field in Format Entry, you must also answer the following prompts.

```
Enter field number to use:___
```

Type the number of the field you want to copy the data from. Continue to define the field until you see

```
Formatting: A
B)efore or A)fter
```

Enter **B** or **A** and press .

A = Use the data after it is formatted for printing.

B = Use the data as it is entered at data entry.

```
Mark characters to use
_____
```

Underlines appear for the field length of the regular field. Use an X (or any keyboard character) to indicate the positions to be used in the sub-field.

For example, the regular field length is 10. The screen below shows the last 4 positions to be used as the sub-field.

```
Mark char positions to use
_______XXXX
```

NOTES

1. If you define a sub-field as a standard length UPC or EAN bar code field, the printer automatically fills the field from the left with zeros to complete the bar code if necessary. UPC or EAN +2 or +5 bar codes do not automatically fill from the left.

2. When using all or part of a bar code to make a sub-field, if you don't want the check digit in the sub-field, specify **before** formatting.

Text Fields

Text fields contain price, date, time, cost code or other general information. When you further define a text field as price, time or date, the data has certain processing requirements.

NOTE: For entering general information (such as department number), press ⏎ only to skip the price, and time or date prompts.

See "Price Field, or "Date and Time Fields" in this section for more information.

Time Fields

See "Date and Time Fields" earlier in this section.

Top of Field

Format Entry Prompt:

```
Top of field towards:
T)op, L)eft, B)ottom or R)ight
```

Values:
- Top
- Left
- Bottom
- Right

This option determines the direction a field prints. "Rotating a Field" in Section 2 discusses this feature.

Top of Character

Format Entry Prompt:

```
Top of character towards: T
T)op or L)eft
```

Values:
- Top
- Left

This option determines the direction the characters print within the field. See "Rotating Characters Within a Field" in Section 2.

Type of Data

Format Entry Prompt:

```
Select type of data: E
A)lpha, N)umeric or E)ither
```

Values:
- Alphabetic characters
- Numeric characters
- Either; alphabetic or numeric characters (or special symbols)

You must specify the type of data for the operator to enter at data entry for each field.

Verify Fields

Format Entry Prompt:

```
Verify field: N
Y)es or N)o
```

Values:
- Y = Yes
- N = No

You can define any prompted field as a verify field. At data entry, the operator must enter the data, then enter it a second time to verify the data. If a data entry error is made, the operator must enter the correct data *twice* in a row before the data is accepted.

Appendix A - Code 128 Information

The 128 bar code is divided into 3 character sets (Code A, Code B, and Code C). Depending on the character set used, the same bar pattern can be one of three characters. Table 1, at the end of this appendix, lists the characters in each character set.

Code A contains upper case letters (A-Z), special characters, and control characters. Code A does not have lower case letters.

Code B contains upper and lower case alphanumeric characters and special characters. Code B does not have control characters.

Code C character set contains pairs of numbers. In code C, each bar pattern represents a pair of numbers, ranging from 00 to 99.

When the data contains at least four numbers in a row, 128 switches to code C, then prints one bar pattern for each pair of numbers. This doubles the numeric data per inch.

Therefore, it may be better to pad numeric data with a zero if it has an odd number of characters. The bar codes below show the difference between an odd number of numeric characters and an even number of numeric characters. Do this only if your system can ignore leading zeros.

Bar Code 1
Data = 1234567

Bar Code 2
Data = 01234567

Bar Code 2 is not as wide as Bar Code 1 because all of its characters are printed with bar symbols from code C.

Only 6 of Bar Code 1's characters are printed in code C. The other character has to be printed in code B. Whenever 128 switches from one character set to another, it adds bar patterns that tell a scanner to switch character sets. These extra bar patterns cause wider bar codes.

Bar Code Width

The width of a Code 128 bar code is determined this way:

- If there are four or more numbers in a row, an even number of them print in code C.
- If there are four or more numbers in a row with an odd quantity (e.g., 7 numbers in a row), one of them prints in code B.
- All other alphanumeric characters are printed in code B.

NOTE: The printer determines which character set to use based on the data. No external control of character set selection is required.

For a given quantity of data, the widest bar code will be the one that switches character set most often. Suppose your data has 14 characters (8 numeric + 6 alphabetic).

The bar code for data arranged like this:

Bar code 1
Data = 1234ABC5678DEF

is wider than data arranged like this:

Bar code 2
Data = 12345678ABCDEF

Here's why bar code 1 is wider:

- The **8 numbers** in each example appear in groups of four or more, and they appear in even-numbered quantities, therefore, all 8 numbers will use code C.
- The **6 alphabetic** characters will use code B.

Look at the example again. This time, data is underlined when the character set changes.

The bar code for data arranged like this:

Bar code 1
Data = 1234<u>A</u>BC<u>5</u>678<u>D</u>EF

is wider than data arranged like this:

Bar code 2
Data = 12345678<u>A</u>BCDEF

This shows that bar code width varies depending on how data is arranged. Separating numeric and alphabetic characters reduces the number of character set changes. Fewer character set changes reduce bar code width.

The table below shows the characters per inch for Code 128. The table shows the values for numeric data, and for alphanumeric data at each of the three densities available on the printer. The characters per inch for your bar code will be somewhere between these two values, depending on the mixture of numeric and alphabetic characters. For a precise calculation of the width of your bar code, refer to the specification for the Code 128 bar code.

Density	Numeric Data	Alphanumeric data
1	17.48	8.74
2	11.66	5.83
3	8.74	4.37

NOTE: Bar codes printed in **parallel mode** (top of the bar code toward top of tag) on the **9465 only** have the characters per inch shown in the following table.

Density	Numeric Data	Alphanumeric data
1	23.92	11.96
2	15.95	7.97
3	11.96	5.98

Quiet Zone

When you estimate the area you'll need for the bar code, remember to add the length of the quiet zone. The quiet zone is an area of white space required at the beginning and end of each bar code. The minimum size of the quiet zone is 0.10, or 10 times the width of the narrowest bar code element, whichever is greater. The tables below show the minimum size of the quiet zone at each density. For wand scanning, the quiet zone should be 0.25 to 0.35 inch.

Density	Quiet Zone
1	0.10 inch
2	0.15 inch
3	0.20 inch

The minimum quiet zone for **parallel bar codes** printed on the 9465 are shown in the following table.

Density	Quiet Zone
1	0.10 inch
2	0.11 inch
3	0.15 inch

Function Codes

Code 128 has four function codes (f1-f4). These special characters can be entered as:

- fixed characters when defining a code 128 field (Format Entry)
- data when printing a batch (Data Entry).

Enter the special 128 function codes as follows:

Press these keys	**to select this function code**
F2 then 1	f1
F2 then 2	f2
F2 then 3	f3
F2 then 4	f4

The function code is displayed as F_1, F_2, F_3, or F_4.

Table A-1. 128 Bar Code Character Sets

Any of the following characters can be used in online communication with the printer by sending the character's standard decimal value. To enter specific characters from the keyboard, refer to "Using the Keyboard" in section 1 of the *Operator's Handbook*.

Values listed on the chart are for reference only; they are not decimal values.

Value	Code A	Code B	Code C	Bar Pattern B	S	B	S	B	S
0	S	SP	00	2	1	2	2	2	2
1	!	!	01	2	2	2	1	2	2
2	"	"	02	2	2	2	2	2	1
3	#	#	03	1	2	1	2	2	3
4	$	$	04	1	2	1	3	2	2
5	%	%	05	1	3	1	2	2	2
6	&	&	06	1	2	2	2	1	3
7	'	'	07	1	2	2	3	1	2
8	(	(	08	1	3	2	2	1	2
9	)	)	09	2	2	1	2	1	3
10	*	*	10	2	2	1	3	1	2
11	+	+	11	2	3	1	2	1	3
12	,	,	12	1	1	2	2	3	2
13	-	-	13	1	2	2	1	3	2
14	.	.	14	1	2	2	2	3	1
15	/	/	15	1	1	3	2	2	2
16	0	0	16	1	2	3	1	2	2
17	1	1	17	1	2	3	2	2	1
18	2	2	18	2	2	3	2	1	1
19	3	3	19	2	2	1	1	3	2
20	4	4	20	2	2	1	2	3	1
21	5	5	21	2	1	3	2	1	2
22	6	6	22	2	2	3	1	1	2

Value	Code A	Code B	Code C	Bar Pattern B	S	B	S	B	S
23	7	7	23	3	1	2	1	3	1
24	8	8	24	3	1	1	2	2	2
25	9	9	25	3	2	1	1	2	2
26	:	:	26	3	2	1	2	2	1
27	;	;	27	3	1	2	2	1	2
28			28	3	2	2	1	1	2
29	=	=	29	3	2	2	2	1	1
30			30	2	1	2	1	2	3
31	?	?	31	2	1	2	3	2	1
32	@	@	32	2	3	2	1	2	1
33	A	A	33	1	1	1	3	2	3
34	B	B	34	1	3	1	1	2	3
35	C	C	35	1	3	1	3	2	1
36	D	D	36	1	1	2	3	1	3
37	E	E	37	1	3	2	1	1	3
38	F	F	38	1	3	2	3	1	1
39	G	G	39	2	1	1	3	1	3
40	H	H	40	2	3	1	1	1	3
41	I	I	41	2	3	1	3	1	1
42	J	J	42	1	1	2	1	3	3
43	K	K	43	1	1	2	3	3	1
44	L	L	44	1	3	2	1	3	1
45	M	M	45	1	1	3	1	2	3
46	N	N	46	1	1	3	3	2	1
47	O	O	47	1	3	3	1	2	1
48	P	P	48	3	1	3	1	2	1
49	Q	Q	49	2	1	1	3	3	1
50	R	R	50	2	3	1	1	3	1
51	S	S	51	2	1	3	1	1	3
52	T	T	52	2	1	3	3	1	1
53	U	U	53	2	1	3	1	3	1
54	V	V	54	3	1	1	1	2	3
55	W	W	55	3	1	1	3	2	1
56	X	X	56	3	3	1	1	2	1
57	Y	Y	57	3	1	2	1	1	3
58	Z	Z	58	3	1	2	3	1	1
59	[	[	59	3	3	2	1	1	1
60	\	\	60	3	1	4	1	1	1
61	]	]	61	2	2	1	4	1	1
62	^	^	62	4	3	1	1	1	1
63	_	_	63	1	1	1	2	2	4
64	NUL	'	64	1	1	1	4	2	
65	SOH	a	65	1	2	1	1	2	4
66	STX	b	66	1	2	1	4	2	1

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